



CITY COUNCIL AGENDA
STAFF REPORT

September 15, 2015
Business Item

SUBJECT

Review the status of the Napa Logistics Park Phase 2 project and adopt a Resolution approving the Water Supply Assessment in conjunction with the Project.

SUBMITTED BY

Colette Meunier, ACIP, Contract Planner,
Brent Cooper, AICP, Community Development Director, and
Jason B. Holley, P.E. Public Works Director

BACKGROUND AND ISSUES

In October 2014, the City received a Use Permit application for Phase 2 of the Napa Logistics Park (NLP) Project. The proposed development contemplates a mixture of up to 2,271,000 square feet of industrial, manufacturing, warehouse, and office uses on an approximately 173 acre property west of Devlin Road and south of the Napa Airport. Phase 1 of the NLP Project is located immediately to the east of the Phase 2 site and is currently under construction. Phase 1 was approved by Napa County, before the land was annexed, in 2009 for a 646,000 square foot warehouse building on a 38 acre parcel and provided for the establishment of a Wetland Preserve in the western portion of the Phase 2 site.

Phase 2 of the Project is subject to environmental review pursuant to the California Environmental Quality Act (CEQA) and requires preparation of an Environmental Impact Report (EIR). Potential impacts on environmental factors such as transportation, noise, public utilities, and biological resources are studied in the Draft EIR. The Draft EIR is available for public review for 45 days (September 14 to October 28, 2015.) The Executive Summary and Project Description from the Draft EIR are included in Attachment 2.

Once the public comment period expires, staff will begin to prepare responses to any comments that are received. These responses will form the basis of the Final EIR. In accordance with the ACMC §19.40, the Planning Commission is the approval authority for the Use Permit. Because their approval of the Use Permit is a discretionary action subject to CEQA, the Commission must also certify the Final EIR.

Because of the scale of the project, Water Code Section §10910 requires that the City Council approve a Water Supply Assessment (WSA) for the Project as part of the CEQA process.

Transportation Impacts

The Draft EIR studied potential impacts at 25 intersections in and around the NLP Phase 2 Project site during various planning scenarios. These potential impacts are based upon a total vehicle trip generation rate of 1,310 vehicles during the AM peak hour and 1,243 vehicles during the PM peak hour. As discussed below, the Applicant has committed to implementing a Travel Demand Management (TDM) Program that will utilize "off-peak shift changes" for future employees (among other strategies) in order to significantly reduce peak hour trip generation rates and thereby reduce potential impacts.

The table below summarizes findings in the Draft EIR (before any mitigation measures are implemented). It is noteworthy that three locations (Intersection #2, 3, 14, 15, & 16) were found to be operating at unacceptable levels of service under existing conditions. A **bolded, shaded X** indicates a potential impact caused by the NLP Phase 2 Project in the respective scenario. Intersections without potential impacts are not shown below, but the information is included in the Draft EIR.

No.	Intersection	Peak Hour	Existing	Existing Plus Background Plus Project	Cumulative Plus Project
1	South Kelly Road/ Devlin Road	AM		X	X
		PM		X	X
2	South Kelly Road/SR-29	AM		X	X
		PM	X	X	X
3	Napa Junction Road/ SR-29	AM		X	X
		PM	X	X	X
4	Eucalyptus Drive/SR-29	AM			
		PM			X
6	South Napa Junction Road/Poco Way/SR-29	AM		X	X
		PM			X
7	Donaldson Way/SR-29	AM		X	X
		PM		X	X
8	American Canyon Road/ SR-29	AM		X	X
		PM		X	X
15	SR-12-29/SR-221-Soscol Ferry Road	AM	X	X	X
		PM	X	X	X
16	Airport Boulevard/ SR-12-29	AM	X	X	X
		PM	X	X	X
19	SR-12/North-South Kelly Road	AM			X
		PM			X
22	Mini Drive/SR-29	AM		X	X
		PM		X	X
23	Meadows Drive/SR-29	AM			X
		PM		X	X
24	SR-37 Westbound Off-Ramp/SR-29	AM			X
		PM			X

The Draft EIR identifies mitigation measures for the transportation impacts such as:

- a. Implementation of an effective TDM Program, including “off-peak shift change” for future employees to ensure that trip generation rates do not exceed 604 vehicles during the AM peak hour and 545 vehicles during the PM peak hour.
- b. Requirements to provide additional financial contributions if the targets of the TDM Program are not met. These additional contribution will be used to fund roadway improvements in American Canyon.
- c. Payment of the City’s Traffic Impact Fee (TIF) to fund roadway improvements City-wide.
- d. Construction of the ultimate configuration of the SR 29 and South Kelly Road intersection, including widening of SR-29 to 6-lanes and various side street turn lanes.
- e. Payment of a fair share contribution towards the following regional improvements:
 - i. Airport Boulevard/SR 12-29 Interchange Project,
 - ii. SR 12-29/SR 221 – Soscol Ferry Road Flyover Ramp

While the proposed mitigation measures will help address many of the project’s potential traffic impacts, many of the intersections will continue to operating at an unacceptable level of service until SR-29 is widened from 4-lanes to 6-lanes. Once SR-29 is widened, intersections on SR-29 through the City would operate acceptably. However, SR-29 is under the jurisdiction of Caltrans and there is uncertainty on timing and funding for these improvements. Planning for these improvements is in the initial stages and the identification of funding sources has not yet completed. Because of this uncertainty, the traffic impacts are still considered significant and thus, unavoidable.

Water Supply Assessment

The purpose of the Water Supply Assessment (WSA) is to (1) identify the water supplier for the proposed development; (2) compare the project water demands to the projections in the 2010 Urban Water Management Plan (2010 UWMP); (3) assess whether the public water system can meet the projected water demand of the proposed development in addition to existing and planned future uses over a 20-year projected time frame; and (4) address the Project’s implementation of the City’s Zero Water Footprint (ZWF) policy. As stated above, because the NLP Phase 2 Project will occupy more than 40 acres of land and have more than 650,000 square feet of buildings, the City Council (acting as the board of the local water supplier) must provide a WSA to be used in the CEQA evaluation of the project.

The 2010 UWMP makes certain assumptions and forecasts about future water demands that are anticipated to occur as the result of new development in accordance with the City’s General Plan. The 2010 UWMP further analyzes the supplies that are anticipated to be available to meet those demands and it draws conclusions about their sufficiency in various planning time horizons. The WSA is based on analysis contained in the 2010 UWMP and incorporates new information about water supply conditions that have arisen since 2010.

It is important to note that the purposes of a WSA and an UWMP are different. An UWMP is a long-range urban planning tool, which is updated regularly, and acts as the City’s “General Plan” for water.

The City is in the process of preparing an updated UWMP for 2015. The 2015 UWMP will evaluate potential solutions for increasing the City's long-term water supply to provide greater water reliability in the future (as called for in City's 2014-15 Strategic Plan).

In contrast, a WSA is a one-time technical study used to help analyze potential environmental impacts of a specific project. In particular, the WSA for the NLP Phase 2 Project analyzes whether the City's known supplies are sufficient to meet its anticipated demands (along with other future growth) under various planning scenarios.

The WSA was prepared by Balance Hydrologics (a subconsultant to FirstCarbon Solutions) and it is included as Attachment 3. It has been carefully reviewed by staff and revised under their direction. While based on the 2010 UWMP, the WSA incorporates new, more conservative assumptions as a result of the ongoing drought conditions currently being experienced state-wide. These conservative assumptions of the worst-case scenario were developed in order to more fully inform the environmental review process.

Most notably, the WSA assumes a worst-case reliability of supply from the State Water Project of only 5% of the contractually available amount (the 2010 UWMP assumes a worst case of 22%). Additionally, future potable water demand is projected to increase, despite the ZWF Policy (which acts to restrict future demands).

The result of these assumptions is to artificially reduce the amount of supplies deemed available for the NLP Phase 2 Project while simultaneously over-stating the amount of future demands that are likely to be realized. It is noteworthy that while this more conservative approach is appropriate for the WSA, it would not necessarily be appropriate as the basis of the forthcoming 2015 UWMP. Moreover, in contrast to the forthcoming 2015 UWMP, the WSA does not explore potential future initiatives that may be undertaken by the City to improve the reliability of its long-term water supply portfolio.

The NLP Phase 2 Project will implement the City's ZWF Policy by extending recycled waterlines into the adjacent industrial area would allow some industrial uses to substitute recycled water for potable water now used. An example would be the use of recycled water for dust control at the waste management facility adjacent to the project site, which now uses potable water for this activity. The amount of potable water to be offset is approximately 41 acre-feet per year.

In summary the WSA verifies that the City has adequate supplies to serve the NLP Phase 2 Project. Moreover, because of its implementation of the ZWF Policy result in the reduction of existing potable water demands the NLP Phase 2 Project will act to mitigate a potentially significant impact to a less than significant level.

Staff recommends that the City Council approve the WSA as an accurate representation of the City's water supply by adopting the Resolution shown in Attachment 1.

COUNCIL PRIORITY PROJECTS AND PROGRAMS

The Council's approval of the WSA which is a step in the approval of the overall project will further the City Council's goal to attract and expand diverse business and employment opportunities and will further develop comprehensive planning and infrastructure improvements.

FINANCIAL IMPACTS

There would not be a financial impact on the city's budget because the applicant will be responsible to pay consultant costs, plus an additional 15 percent overhead in accordance with the City's Fee Schedule.

The overhead covers the City's staff and administrative costs that are not directly recoverable through the fees on development projects.

The project, if approved, will substantially increase revenues to the City in the form of increased property tax revenues. Also, the increased number of jobs would have an indirect effect on sales tax revenues when the new businesses and their employees shop and dine in our community.

ENVIRONMENTAL DETERMINATION

The WSA is a technical document used in the CEQA review process and is itself not a project for purposes of CEQA. The City Council is not proposed to take any action regarding the EIR at this meeting.

STAFF RECOMMENDATION

Staff recommends that the City Council review the status of the Napa Logistics Park Phase 2 project and adopt a Resolution approving the Water Supply Assessment in conjunction with the Project.

Attachments

1. Resolution approving the Water Supply Assessment in conjunction with the Napa Logistics Park Phase 2 Project
2. Napa Logistics Park Phase 2 Project Draft Environmental Impact Report Executive Summary. A complete copy of the Draft EIR will be available on the City's website on September 14, 2015.
3. Water Supply Assessment for the Napa Logistics Park Phase 2 Project.

cc. Ernie Knodel, Orchard Partners

RESOLUTION NO. 2015-

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF AMERICAN CANYON APPROVING THE WATER SUPPLY ASSESSMENT IN CONJUNCTION WITH THE NAPA LOGISTICS PARK PHASE 2 PROJECT

WHEREAS, the Napa Logistics Park (NLP) Phase 2 Project contemplates the development of a mixture of industrial, manufacturing, warehouse, and office uses totaling 2,271,000 square feet on a vacant, approximately 173-acre property west of Devlin Road and south of the Napa Airport; and

WHEREAS, that certain *Water Supply Assessment (WSA) for the Napa Logistics Park Phase 2 Project*, dated September 2, 2015, was prepared by Balance Hydrologics Inc. in conjunction with the proposed development; and

WHEREAS, the WSA was prepared in accordance with Water Code Section 10910 and it (a) identifies the City of American Canyon as the public water supplier for the proposed development; (b) compares the anticipated water demands of the NLP Phase 2 Project with the projected demands assumed in the City's most recent 2010 Urban Water Management Plan; and (c) assess whether the City's water system can meet the projected water demand of the NLP Phase 2 Project in addition to existing and planned future uses over a 20-year projected time frame; and

WHEREAS, the WSA is incorporated by reference and included as a technical appendix to the Environmental Impact Report (EIR) prepared in conjunction with the NLP Phase 2 Project pursuant to Public Resource Code Section 21080.1; and

WHEREAS, at its September 15, 2015 meeting, the City Council of the City of American Canyon received a presentation and heard public testimony regarding the findings of the Draft EIR and the WSA for the proposed development;

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of American Canyon hereby finds that the *Water Supply Assessment for the Napa Logistics Park Phase 2 Project*, prepared by Balance Hydrologics Inc. and dated September 2, 2015 accurately provides the information required by Water Code Section 10910; and

NOW, THEREFORE, BE IT FUTHER RESOLVED that the City Council of the City of American Canyon, acting as the board of the public water service provider, hereby determines it has adequate supplies to serve the Napa Logistics Park Phase 2 Project and approves that certain *Water Supply Assessment for the Napa Logistics Park Phase 2 Project*, prepared by Balance Hydrologics Inc. and dated September 2, 2015.

PASSED, APPROVED AND ADOPTED at a regularly scheduled meeting of the City Council of the City of American Canyon held on the 15th day of September, 2015 by the following vote:

ATTACHMENT 1

AYES:
NOES:
ABSTAIN:
ABSENT:

Leon Garcia, Mayor

ATTEST:

APPROVED AS TO FORM:

Cherri Walton, Deputy City Clerk

William D. Ross, City Attorney



**EXECUTIVE SUMMARY
for the
DRAFT
Environmental Impact Report
Napa Logistics Park Phase 2 Project
City of American Canyon, Napa County, California
State Clearinghouse No. 2014082033**

Prepared for:



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Prepared by:

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Contact: Jason Brandman, Project Director
Grant Gruber, Project Manager

Date: September 14, 2015

Attachment 2

www.FirstCarbonSolutions.com

EXECUTIVE SUMMARY

Purpose

This Draft Environmental Impact Report (Draft EIR) is prepared in accordance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with the implementation of the Napa Logistics Park Phase 2 Project (State Clearinghouse No. 2014082033). This document is prepared in conformance with CEQA (California Public Resources Code, Section 21000, et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, Section 15000, et seq.).

The purpose of this Draft EIR is to inform decision makers, representatives of affected and responsible agencies, the public, and other interested parties of the potential environmental effects that may result from implementation of the proposed project. This Draft EIR describes potential impacts relating to a wide variety of environmental issues and methods by which these impacts can be mitigated or avoided.

Project Summary

Project Location

The project site is located in the City of American Canyon, Napa County, California. The approximately 173-acre site is bounded by undeveloped land (west); industrial, commercial uses and the Napa County Airport (north); Phase I of the Napa Logistics Project and the Napa Branch Line railroad tracks (east); and undeveloped land designated for general industrial use (south).

Project Description

The proposed project entails obtaining approval of a Use Permit to facilitate the development of the project site with industrial uses and infrastructure. Total build-out potential would be 2,271,000 square feet of warehouse, manufacturing, distribution, E-commerce, and accessory retail/office uses. This square footage would be in addition to the 646,000 square feet approved for Building 1 in Phase 1 of this development. The project site would also be subdivided into individual lots in the future as development proceeds.

The proposed buildings would consist of concrete tilt-up panel construction. Actual floor area will vary, depending on the design of individual buildings that may include multiple stories. Building height would vary with a maximum of 100 feet above finished grade. Use Permit approval is necessary for building heights that exceed 35 feet.

Vehicular access to the project would be provided via Devlin Road, which currently terminates at the southeast corner of the project site. (Devlin Road is grade-separated over the Napa Branch Line immediately east of the project site). Three roadways, Middleton Way (being constructed as part of Phase 1), and Road B and Road C proposed as part of Phase 2, would provide circulation within the project site and connect to Devlin Road

Project Objectives

The objectives of the proposed project are to:

1. Facilitate the development of land planned for business park/industrial uses to its highest and best use through an economically viable and flexible plan that accommodates a range of uses.
2. Positively contribute to the local economy via new capital investment, creation of new employment opportunities, and the expansion of the tax base.
3. Provide the City of American Canyon with a high quality, employment-generating industrial development.
4. Serve local and regional demand for manufacturing, warehousing for ecommerce inventory storage and fulfillment, and other industrial uses.
5. Locate a 24-7 industrial land use in a manner that allows for direct and safe access to the regional highway and rail networks while minimizing impacts to residential areas.
6. Facilitate the logical and orderly development of the Devlin Road corridor in accordance with the City of American Canyon General Plan and Napa County Airport Industrial Area Specific Plan.
7. Create a range of new employment opportunities for local residents.
8. Contribute to the long-term fiscal health of the City of American Canyon by generating new taxable sales, development impact fees, business license fees, and other sources of revenue.
9. Minimize potential truck and pedestrian conflicts through site planning that clearly separates truck and pedestrian access areas.
10. Minimize noise and land use compatibility impacts to the surrounding uses through site planning measures such as building orientation, screen walls, and landscaping.
11. Permanently protect the most biologically viable wetlands within the project site.

Significant Unavoidable Adverse Impacts

The proposed project would result in the following significant unavoidable impacts:

- **Consistency with Air Quality Management Plan:** The proposed project would result in exceedances of regional emissions thresholds and, therefore, be inconsistent with the Bay Area Air Quality Management District regional air quality planning assumptions. Mitigation is proposed requiring the implementation of feasible emissions reduction measures; however, these measures would not reconcile this inconsistency. Therefore, the significance after mitigation is significant and unavoidable.
- **Cumulative Criteria Pollutant Impacts:** The project would result in a cumulatively considerable net increase of criteria pollutants for which the project region is nonattainment

under an applicable federal or state ambient air quality standard. Mitigation is proposed requiring the implementation of air emissions reduction measures, but it would not fully reduce this impact to a level of less than significant. Therefore, the significance after mitigation is significant and unavoidable.

- **Sensitive Receptors:** The proposed project would emit Toxic Air Contaminants (TAC) that could potential expose sensitive receptors in the project vicinity to unhealthful levels of pollution because it would add TACs into an area that already has an unhealthy level of pollution. Although the project's TAC emissions would be below Bay Area Air Quality Management District thresholds, TAC emissions from other projects would result in a significant unavoidable impact.
- **Greenhouse Gas Emissions:** The proposed project would generate new sources of greenhouse gas emissions that would exceed Bay Area Air Quality Management District thresholds. Mitigation is proposed requiring the implementation of feasible emissions reduction measures; however, these measures would not reduce emissions to less than significant levels. Therefore, the significance after mitigation is significant and unavoidable.
- **Existing Plus Background Traffic:** The proposed project would generate new trips to intersections that would operate below the minimum acceptable standard under Existing Plus Background Traffic Conditions. Improvements are identified for each location; however, such improvements are uncertain and may not be feasible because they rely on the approval of third-party agencies or funding sources that are not secured at the time of this writing. As such, the significance after mitigation is significant and unavoidable.
- **Existing Plus Background Plus Project Traffic:** The proposed project would generate new trips to intersections that would operate below the minimum acceptable standard under Existing Plus Background Plus Project Traffic Conditions. Improvements are identified for each location; however, such improvements are uncertain and may not be feasible because they rely on the approval of third-party agencies or funding sources that are not secured at the time of this writing. As such, the significance after mitigation is significant and unavoidable.
- **Cumulative Traffic:** The proposed project would generate new trips to intersections that would operate below the minimum acceptable standard under Cumulative Traffic Conditions. Improvements are identified for each location; however, such improvements are uncertain and may not be feasible because they rely on the approval of third-party agencies or funding sources that are not secured at the time of this writing. As such, the significance after mitigation is significant and unavoidable.
- **Congestion Management Plan:** The proposed project would generate new trips to various Congestion Management Plan-designated roadway facilities. Certain facilities are projected to operate at unacceptable levels and improvements such as road widening are not acceptable to jurisdictions in Napa County. Furthermore, certain facilities are outside of the jurisdictional control of the City of American Canyon; therefore, there is uncertainty as to whether feasible improvements could be implemented, if determined to be available. Therefore, the significance after mitigation is significant and unavoidable.

Summary of Project Alternatives

Below is a summary of the alternatives to the proposed project considered in Section 5, Alternatives to the Proposed Project.

No Project Alternative

The project site would remain undeveloped for the foreseeable future and no development would occur.

Reduced Density Alternative

The proposed project would be reduced by 400,000 square feet and the existing wetland preserve would be expanded by 20.69 acres. The reduction in development potential would be accomplished by eliminating Building 5 and transferring the acreage associated with this lot to the wetland preserve. This would represent an 18 percent reduction in development potential compared to the proposed project and a 70 percent increase in existing wetland preserve acreage.

Warehouse Alternative

The proposed project would consist of the development of 2,271,000 square feet of logistics warehouse uses on the project site. The layout and location of buildings and infrastructure would be identical to the proposed project; however, the project would consist of exclusively of logistics warehouse uses.

Areas of Controversy

Pursuant to CEQA Guidelines Section 15123(b), a summary section must address areas of controversy known to the lead agency, including issues raised by agencies and the public, and it must also address issues to be resolved, including the choice among alternatives and whether or how to mitigate the significant effects.

A Notice of Preparation (NOP) for the proposed project was issued on August 12, 2014. The NOP describing the original concept for the project and issues to be addressed in the EIR was distributed to the State Clearinghouse, responsible agencies, and other interested parties for a 30-day public review period extending from August 12, 2014 through September 12, 2014. The NOP identified the potential for significant impacts on the environment related to the following topical areas:

- Aesthetics, Light, and Glare
- Air Quality/Greenhouse Gas Emissions
- Biological Resources
- Cultural Resources
- Geology, Soils, and Seismicity
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise
- Public Services and Utilities
- Transportation

Disagreement Among Experts

This Draft EIR contains substantial evidence to support all the conclusions presented herein. It is possible that there will be disagreement among various parties regarding these conclusions, although the City of American Canyon is not aware of any disputed conclusions at the time of this writing. Both the CEQA Guidelines and case law clearly provide the standards for treating disagreement among experts. Where evidence and opinions conflict on an issue concerning the environment, and the lead agency knows of these controversies in advance, the EIR must acknowledge the controversies, summarize the conflicting opinions of the experts, and include sufficient information to allow the public and decision makers to make an informed judgment about the environmental consequences of the proposed project.

Potentially Controversial Issues

Below is a list of potentially controversial issues that may be raised during the public review and hearing process of this Draft EIR:

- Air Quality/Greenhouse Gas Emissions
- Biological Resources
- Land Use
- Noise
- Public Services and Utilities
- Transportation

It is also possible that evidence will be presented during the 45-day, statutory Draft EIR public review period that may create disagreement. Decision makers would consider this evidence during the public hearing process.

In rendering a decision on a project where there is disagreement among experts, the decision makers are not obligated to select the most environmentally preferable viewpoint. Decision makers are vested with the ability to choose the expert opinion that they find more compelling and need not resolve a dispute among experts. In their proceedings, decision makers must consider comments received concerning the adequacy of the Draft EIR and address any objections raised in these comments. However, decision makers are not obligated to follow any directives, recommendations, or suggestions presented in comments on the Draft EIR, and can certify the Final EIR without needing to resolve disagreements among experts.

Public Review of the Draft EIR

Upon completion of the Draft EIR, the City of American Canyon filed a Notice of Completion (NOC) with the State Office of Planning and Research to begin the public review period (Public Resources Code, Section 21161). Concurrent with the NOC, this Draft EIR has been distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the Draft EIR in accordance with Public Resources Code 21092(b)(3). During the public review period, the Draft EIR, including the technical appendices, is available for review at the City of American Canyon Community Development Department offices and the American Canyon Library. The address for each location is provided below.

City of American Canyon
Community Development Department
4381 Broadway Street, Suite 201
American Canyon, CA 94503
Hours: Monday-Friday, 8:30 a.m. to 5:00 p.m.

American Canyon Library
300 Crawford Way
American Canyon, CA 94503
Tuesday: 10:00 a.m. to 5:30 p.m.
Wednesday/Thursday: 1:00 p.m. to 8:00 p.m.
Friday/Saturday: 10:00 a.m. to 5:30 p.m.

Agencies, organizations, and interested parties have the opportunity to comment on the Draft EIR during the 45-day public review period. Written comments on this Draft EIR should be addressed to:

Ms. Colette Meunier, Consulting Project Planner
City of American Canyon
Community Development Department
4381 Broadway Street, Suite 201
American Canyon, CA 94503
Phone: 707.647.5345
Fax: 707.643.2355
Email: cmeunier@cityofamericancanyon.org

Submittal of electronic comments in Microsoft Word or Adobe PDF format is encouraged. Upon completion of the public review period, written responses to all significant environmental issues raised will be prepared and made available for review by the commenting agencies at least 10 days prior to the public hearing before the City of American Canyon on the project, at which the certification of the Final EIR will be considered. Comments received and the responses to comments will be included as part of the record for consideration by decision makers for the project.

Executive Summary Matrix

Table ES-1 below summarizes the impacts, mitigation measures, and resulting level of significance after mitigation for the relevant environmental issue areas evaluated for the proposed project. The table is intended to provide an overview; narrative discussions for the issue areas are included in the corresponding section of this EIR. Table ES-1 is included in the EIR as required by CEQA Guidelines Section 15123(b)(1).

Table ES-1: Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Section 3.1 – Aesthetics, Light, and Glare		
Impact AES-1: The project would not have a substantial adverse effect on a scenic vista.	No mitigation is necessary.	Less than significant impact.
Impact AES-2: The project would not substantially degrade the existing visual character or quality of the site and its surroundings.	No mitigation is necessary.	Less than significant impact.
Impact AES-3: The project may create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.	MM AES-2: Prior to issuance of building permits for the proposed project, the project applicant shall prepare and submit a photometric plan to the City of American Canyon for review and approval. The photometric plan must demonstrate that all exterior light fixtures would be directed downward or employ full cutoff fixtures to minimize light spillage and avoid interference with aviation operations at the Napa County Airport. The approved plan shall be incorporated into the final building plans.	Less than significant impact.
Section 3.2 – Air Quality/Greenhouse Gas Emissions		
Impact AIR-1: The project may conflict with or obstruct implementation of the applicable air quality plan.	Implement Mitigation Measures AIR-2, AIR-3a, and AIR-3b.	Significant unavoidable impact.
Impact AIR-2: The project may violate any air quality standard or contribute substantially to an existing or projected air quality violation.	MM AIR-2: All construction activity: During construction activities, the following air pollution control measures shall be implemented: <ul style="list-style-type: none"> • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day, or more as needed. • All haul trucks transporting soil, sand, or other loose material offsite shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads and surfaces shall be limited to 15 mph. • All roadways, driveways, and sidewalks shall be paved as soon as possible. 	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<ul style="list-style-type: none"> Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 2 minutes (beyond the 5 minute limit required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator. A publicly visible sign shall be posted with a name and telephone number of the applicant's representative for dust complaints. This person shall respond and take corrective action within 2 business days of a complaint or issue notification. The Bay Area Air Quality Management District's phone number shall also be visible to ensure compliance with applicable regulations. 	
<p>Impact AIR-3: The project may result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).</p>	<p>MM AIR-3a: During onsite construction activities, the applicant shall require the use of clean construction equipment. All diesel equipment shall be powered by Tier 3 engines or equivalent. In addition, all off-road equipment idling shall be limited to 2 minutes.</p> <p>MM AIR-3b: Prior to issuance of the final certificate of occupancy for each building, the following measures to reduce emissions from onsite heavy duty trucks shall be implemented:</p> <ol style="list-style-type: none"> Post signs in all loading/unloading areas informing truck drivers California Air Resources Board (CARB) diesel anti-idling regulations. The signs shall include telephone numbers of the building facilities manager and the CARB to report violations. Require facility management to be trained in CARB anti-idling regulations. Anti-idling training shall be incorporated into the facility operations manual or equivalent document. 	Significant unavoidable impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	c) Provide tenants with information about SmartWay or other organizations that seek to reduce air emissions associated with goods movement.	
Impact AIR-4: The project may expose sensitive receptors to substantial pollutant concentrations.	Implement Mitigation Measures AIR-2, AIR-3a, and AIR-3b.	Significant unavoidable impact.
Impact AIR-5: The project would not create objectionable odors affecting a substantial number of people.	No mitigation is necessary.	Less than significant impact.
Impact AIR-6: The proposed project may result in significant impacts from potential accidental release of acutely hazardous air pollutants.	Implement Mitigation Measure HAZ-1b	Less than significant impact.
Impact AIR-7: Implementation of the proposed project would generate direct and indirect greenhouse gas emissions resulting in a significant impact on the environment.	Implement Mitigation Measure AIR-3b.	Significant unavoidable impact.
Impact AIR-8: Implementation of the proposed project would not conflict with any applicable plan, policy or regulation of an agency adopted to reduce the emissions of greenhouse gases.	No mitigation is necessary.	Less than significant impact.
Section 3.3 –Biological Resources		
Impact BIO-1: The proposed project may have a substantial adverse effect on special status plant species.	MM BIO-1a: Prior to any vegetation removal or ground disturbing activities in the off-site development areas, focused surveys shall be conducted to determine the presence of special-status plant species with potential to occur in the off-site development area. Surveys shall be conducted in accordance with the Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFG 2009). These guidelines require rare plant surveys to be conducted at the proper time of year when rare or endangered species are both “evident” and identifiable. Field surveys shall be scheduled to coincide with known blooming periods, and/or during periods of	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>physiological development that are necessary to identify the plant species of concern. If no special-status plant species are found on the off-site development areas, then the project will not have any impacts to the species and no additional mitigation measures are necessary. If any of the special-status plant species are found on the off-site development areas and cannot be avoided, the following measures shall be required:</p> <ul style="list-style-type: none"> Where surveys determine that special-status plant species are present within the off-site development areas, direct and indirect impacts of the project on the species (e.g., alkali milk-vetch, big-scale balsamroot, Contra Costa goldfields, dwarf downingia, legenera, San Joaquin spearscale, saline clover, and showy Indian clover) shall be avoided where feasible through the establishment of activity exclusion zones, where no ground-disturbing activities shall take place, including construction of new facilities, construction staging, or other temporary work areas. Activity exclusion zones for special-status plant species shall be established prior to construction activities around each occupied habitat site, the boundaries of which shall be clearly marked with standard orange plastic construction exclusion fencing or its equivalent. The establishment of activity exclusion zones shall not be required if no construction-related disturbances would occur within 250 feet of the occupied habitat site. The size of activity exclusion zones may be reduced through consultation with a qualified biologist and with concurrence from USFWS or CDFW, as applicable, based on site-specific conditions. <p>MM BIO-1b: If special status plants are found in the off-site development areas and cannot be avoided, the Applicant shall retain a qualified biologist and consult with the USFWS or CDFW, as applicable, to prepare a special-status plant mitigation and monitoring plan to determine feasible impact minimization and mitigation for those special status plants, which may include but are not limited to elements as applicable to the species, based on the project impacts, and as modified by the resource agencies:</p> <ul style="list-style-type: none"> On-site seed/propagule salvage and transplantation to mitigate for unavoidable temporary construction impacts to special status plants 	

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>habitat in the off-site development areas.</p> <ul style="list-style-type: none"> • Incorporating project site management requirements designed to reduce ongoing impacts from project operation, including controlling public access to avoided special status plants habitat remaining on-site. • A salvage/transplanting program shall be developed, as part of a special-status plant mitigation and monitoring plan, for the salvage and transfer of special status plants populations from the off-site development areas before the initiation of construction activities to another location either off-site or on-site that will be preserved in perpetuity (via conservation easement, deed restriction, or other appropriate legal means). Permits may be required from the CDFW or USFWS if a listed species is found and may require further mitigation in consultation with the appropriate agency or agencies. (Note: Salvage/transplantation methods for the salvaged plant population must be developed on a species-by-species basis and would likely include the involvement of local conservation easements/preserves/open space, where applicable to ensure preservation in perpetuity). The salvage of special-status plant species must be performed at the correct time of year and transplanting must be successfully completed during the same year as construction was completed. The propagation program shall include establishment of success criteria for the affected special status plants. • Efforts shall be made to salvage portions of the habitat or plant populations that will be lost as a result of implementation of the proposed project. In addition to salvaging of special status plants themselves, salvage efforts shall include topsoil and seed-banks surrounding impacted plants, if doing so will not contribute to the spread of invasive or noxious plant species. • If the resource agencies determine that implementation of Mitigation Measure BIO-1b is insufficient to mitigate for the loss of special status plants, the applicant shall instead implement Mitigation Measure BIO-1d. 	

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>MM BIO-1c: If special status plants are found on-site and Mitigation Measure BIO-1b is implemented, the Applicant shall design and implement a monitoring program as part of the special-status plant mitigation and monitoring plan to evaluate compliance with and the effectiveness of these mitigation measures. The monitoring program shall be conducted by a qualified botanist, and shall take place periodically during project construction, and annually, following the completion of construction, for 5 years. The project applicant shall bear the financial responsibility for mitigation measure monitoring and reporting for the entirety of the 5 year reporting period. If the monitoring program identifies mitigation measure noncompliance or ineffectiveness, the project applicant shall fund and implement remedial measures including, but not limited to, on-site habitat restoration, re-seeding, the installation and maintenance of additional fencing, and other appropriate measures. The project applicant shall ensure that sufficient funding exists to complete all reasonably foreseeable remedial actions prior to the commencement of project construction. Annual monitoring reports shall be submitted to the USFWS or CDFW as applicable.</p> <p>MM BIO-1d: In lieu of on-site mitigation pursuant to Mitigation Measure BIO-1b and Mitigation Measure BIO-1c, as allowed in writing by the City (for CEQA-protected species only) or CDFW (for state-listed species) or USFWS (for federally listed species), mitigation requirements may be satisfied via the purchase of qualified mitigation credits or the preservation of off-site habitat.</p> <p>Appropriate off-site conservation opportunities shall be identified and, if feasible, protected in perpetuity through the purchase of conservation easements and/or mitigation bank credits. The habitat value of off-site conservation areas shall be enhanced where feasible through means such as reducing grazing intensity and restricting access. At a minimum, the loss of individuals or acres of occupied habitat (as appropriate) of a special-status species shall be compensated for through the acquisition, protection, and subsequent management of other existing occurrences at</p>	

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	a ratio of 1:1. The resource agencies may increase the ratio depending on the rarity of the affected rare plant species (i.e., a listed species), and the abundance of the rare plant habitat impacted.	
Impact BIO-2: The proposed project may have a substantial adverse effect on special-status wildlife species or nesting birds.	<p>MM BIO-2a: (Swainson’s Hawk) Pre-construction surveys shall be conducted for a half-mile radius around all project activities and shall be completed for at least two survey periods immediately prior to project initiation. The surveys shall be conducted in accordance with CDFW’s “Recommended Timing and Methodology for Swainson’s Hawk Nesting Surveys in California’s Central Valley” (CDFG 2000), which identifies different survey windows throughout the pre-nesting and nesting season (ranging from January 1 through July 30/post-fledging) that have different survey methodologies and requirements, as set forth in the “Recommended Timing and Methodology for Swainson’s Hawk Nesting Surveys in California’s Central Valley.”</p> <p>If Swainson’s hawks are found to be nesting within 1,000 feet of the project site, nest protection buffers shall be established that are a minimum of 300 feet from the nest site. The nest site buffer shall be established in consultation with CDFW or as required in any Fish and Game Section 2081 management authorization issued to the project by CDFW.</p> <p>MM BIO-2b: (Northern Harrier and Ground Nesting Birds) Prior to ground disturbance a nesting survey shall be conducted for ground nesting raptors and birds, including the northern harrier, during the nesting season, between February 1 and September 1. Typically, the northern harrier builds a grass-lined nest on the ground in grassland habitat. In order to determine if this raptor or other ground-nesting species are nesting on-site, a qualified biologist shall conduct walking transects through the project site’s herbaceous and grassland habitats. If a northern harrier nest is identified, a qualified biologist who frequently works with nesting raptors/birds shall prescribe adequate nesting buffers to protect the nesting birds from harm. These buffers shall be established with orange construction fencing. If the nest is located outside of the project site, then</p>	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>the buffer should be demarcated where the buffer intersects the project site. No construction or earth-moving activity shall occur within the established buffer until the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones. If a qualified biologist is not hired to monitor the nesting raptors then the buffers shall be maintained in place through the end of August.</p> <p>MM BIO-2c: (Tricolored Blackbird and Other Nesting Birds) If construction is to commence between February 1 and September 1, a nesting bird survey shall be conducted 15 days prior to earth moving or the commencement of construction work. If any birds are found nesting on the project site or within a zone of influence of the project site, qualified biologist who frequently works with nesting birds shall prescribe adequate nesting buffers to protect the nesting birds from harm. No construction or earth-moving activity shall occur within any nest protection buffer until it is determined by a qualified biologist that the nesting cycle is complete and any young that fledge have attained sufficient flight skills to avoid being impacted by the proposed project.</p>	
Impact BIO-3: The proposed project will not have a substantial adverse impact on riparian habitats or other sensitive natural community.	No mitigation is necessary	No impact.
Impact BIO-4: The proposed project may have a substantial adverse impact on state and federal protected wetlands.	<p>MM BIO-4a: Prior to issuance of grading permits, the project applicant shall obtain all requisite approvals and permits from the USACE and RWQCB for on-site and off-site impacts to waters of the United States and waters of the State. Mitigation of impacts shall be achieved through either (1) creation and preservation of seasonal wetland habitat within the 37-acre Preserve Area, or (2) off-site restoration of features of equal or greater value, or (3) purchase of credits at an agency-approved mitigation bank in the region at a ratio to be determined through consultation with the USACE and RWQCB, but no less than a 1:1 ratio.</p> <p>MM BIO-4b: The project shall avoid impacts to wetlands occurring within the proposed sewer alignment by adjusting staging, access, and excavation</p>	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	areas to accommodate existing wetlands, and by installing silt fence around the perimeter of any existing wetlands adjacent to pipeline installation work.	
Impact BIO-5: The proposed project may have a substantial adverse impact on No Name Creek.	<p>MM BIO-5a: Impacts within No Name Creek (above the ordinary high water mark but below the top-of-bank) shall be mitigated to the satisfaction of the California Department of Fish and Wildlife (CDFW) as part of the issuance of a Streambed Alteration Agreement pursuant to Section 1602 of the Fish and Game Code. Prior to issuance of grading permits, the project applicant shall obtain all requisite approvals and permits from CDFW for on-site and off-site impacts to No Name Creek.</p> <p>MM BIO-5b: The project shall bore and jack the new sewer and recycled water lines under No Name Creek, if the western alignment is selected, to avoid potential impacts to waters of the U.S or the creek. Prior to the issuance of construction permits for the off-site utilities, the applicant shall submit a plan for this work demonstrating that no impacts to the waters of the U.S. shall occur. All necessary approvals from CDFW or USACE shall be obtained prior to the start of this construction.</p>	Less than significant impact.
Impact BIO-6: The proposed project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites.	No mitigation is necessary.	Less than significant impact.
Impact BIO-7: The proposed project would not conflict with any local biological ordinances or policies.	No mitigation is necessary.	Less than significant impact.
Section 3.4 –Cultural Resources		
Impact CUL-1: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered historic resources.	MM CUL-1: If prehistoric or historic-period archaeological resources are encountered, all construction activities within 100 feet of the find shall halt and the City of American Canyon shall be notified. Prehistoric archaeological materials might include obsidian and chert flakedstone tools (e.g., projectile points, knives, scrapers) or toolmaking debris;	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>culturally darkened soil (“midden”) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. A Secretary of the Interior-qualified archaeologist shall inspect the findings within 24 hours of discovery. If it is determined that the project could damage a historical resource or a unique archaeological resource (as defined pursuant to the CEQA Guidelines) mitigation shall be implemented in accordance with PRC Section 21083.2 and Section 15126.4 of the CEQA Guidelines, with a preference for preservation in place. Consistent with Section 15126.4(b)(3), this may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If avoidance is not feasible, a qualified archaeologist shall prepare and implement a detailed treatment plan in consultation with the City of American Canyon. Treatment of unique archaeological resources shall follow the applicable requirements of PRC Section 21083.2. Treatment for most resources would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource to be impacted by the Project. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and state repositories, libraries, and interested professionals.</p>	

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact CUL-2: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered archaeological resources.	Implement Mitigation Measure CUL-1.	Less than significant impact.
Impact CUL-3: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered paleontological resources.	MM CUL-3: If potential fossils are discovered during project implementation, all earthwork or other types of ground disturbance within 100 feet of the find shall stop immediately until a qualified professional paleontologist can assess the nature and importance of the find. The paleontologist shall report his/her findings to the City of American Canyon. Based on the scientific value or uniqueness of the find, the paleontologist shall either record the find and recommend that the City of American Canyon allow work to continue, or recommend salvage and recovery of the fossil. The paleontologist shall, if required, propose modifications to the stop-work radius based on the nature of the find, site geology, and the activities occurring on the site. If treatment and salvage is required, recommendations will be consistent with Society of Vertebrate Paleontology guidelines and currently accepted scientific practice. If required, treatment for fossil remains shall include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection, and, if required, shall also include preparation of a report for publication describing the finds.	Less than significant impact.
Impact CUL-4: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered human burial sites.	MM CUL-4: In the event of discovery or recognition of any human remains during construction activities, such activities within 100 feet of the find shall cease until the Napa County Coroner has been contacted to determine that no investigation of the cause of death is required. The Native American Heritage Commission (NAHC) will be contacted within 24 hours if it is determined that the remains are Native American. The NAHC will then identify the person or persons it believes to be the most likely descendant from the deceased Native American (PRC Section 5097.98), who in turn would make recommendations to the City of American Canyon for the appropriate means of treating the human remains and any associated funerary objects [CEQA Guidelines Section 15064.5(d)].	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Section 3.5 – Geology, Soils, and Seismicity		
Impact GEO-1: The proposed project may expose people or structures to potential substantial adverse effects associated with seismic hazards.	<p>MM GEO-1a: Prior to the issuance of the first construction permit, the project applicant shall retain a California registered geologist or geotechnical engineer to prepare a fault investigation study for the portion of the West Napa Fault that is located within the project site. The fault investigation study shall identify the location of the fault within the project site and determine appropriate setback requirements in accordance with the Alquist-Priolo Earthquake Fault Zoning Act and the California Building Standards Code. The fault investigation study shall be submitted to the City of American Canyon for review and approval as part of the construction permit application. The recommendations of the approved study shall be incorporated into the project plans and all applicable construction-related permits to ensure all geotechnical issues are addressed in compliance with current building code requirements.</p> <p>MM GEO-1b: Prior to the issuance of building permits for each structure, the project applicant shall submit a design-level Geotechnical Investigation to the City of American Canyon for review and approval. The investigation shall be prepared by a qualified engineer and identify necessary grading and building practices necessary to achieve compliance with the latest adopted edition of the California Building Standards Code geologic, soils, and seismic requirements, including abatement of expansive soil conditions. The report shall also determine the final design parameters for walls, foundations, foundation slabs, and surrounding related improvements (e.g., utilities roadways, parking lots, and sidewalks). The measures identified in the approved report shall be incorporated into the project plans and all applicable construction-related permits.</p>	Less than significant impact.
Impact GEO-2: The proposed project may result in substantial soil erosion or the loss of topsoil.	Implement Mitigation Measure HYD-1a.	Less than significant impact.
Impact GEO-3: The proposed project would not be located on an unstable geologic unit or soil.	No mitigation is necessary.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact GEO-4: The proposed project may create substantial risks to life or property as a result of expansive soil conditions on the project site.	Implement Mitigation Measure GEO-1b.	Less than significant impact.
Section 3.6 – Hazards and Hazardous Materials		
Impact HAZ-1: The project may create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	<p>MM HAZ-1a: Prior to construction, all contractor and subcontractor personnel shall receive training regarding the appropriate work practices necessary to effectively comply with the applicable environmental laws and regulations, including, without limitation, hazardous material spill prevention and response measures.</p> <p>MM HAZ-1b: Prior to issuance of the certificate of occupancy for any uses that involve the storage or use of acutely hazardous materials, the tenant shall consult with the California Emergency Management Agency to determine the guidelines and regulations applicable to the operations. If required, tenants shall prepare a Risk Management Plan consistent with CalARP prior to undertaking any storage or use of acutely hazardous materials.</p> <p>MM HAZ-1c: During construction and operations, hazardous materials shall not be disposed of or released onto the ground, the underlying groundwater, or any surface water. Totally enclosed containment shall be provided for all trash. All hazardous construction waste shall be removed to a hazardous waste facility permitted or otherwise authorized to treat, store or dispose of such materials.</p>	Less than significant impact.
Impact HAZ-2: The proposed project may create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.	Implement Mitigation Measures HAZ-1a, HAZ-1b, and HAZ-1c.	Less than significant impact.
Impact HAZ-3: The project would not be located on a hazardous materials site compiled pursuant to Government Code Section 65962.5.	No mitigation is necessary.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact HAZ-4: The project may create aviation safety hazards for persons residing or working within 2 miles of the Napa County Airport.	Implement Mitigation Measure LU-3.	Less than significant impact.
Impact HAZ-5: The proposed project would not impair emergency response or evacuation in the project vicinity.	No mitigation is necessary.	Less than significant impact.
Section 3.7 – Hydrology and Water Quality		
Impact HYD-1: Construction and operation activities associated with the proposed project may degrade surface water quality in downstream water bodies.	<p>MM HYD-1a: Prior to issuance of grading permits for the proposed project, the City of American Canyon shall verify that the applicant has prepared a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the requirements of the statewide Construction General Permit. The SWPPP shall be designed to address the following objectives: (1) all pollutants and their sources, including sources of sediment associated with construction, construction site erosion, and all other activities associated with construction activity are controlled; (2) where not otherwise required to be under a Regional Water Quality Control Board permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated; (3) site best management practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity; and (4) stabilization BMPs are installed to reduce or eliminate pollutants after construction are completed. The SWPPP shall be prepared by a qualified SWPPP developer. The SWPPP shall include the minimum BMPs required for the identified Risk Level. BMP implementation shall be consistent with the BMP requirements in the most recent version of the California Stormwater Quality Association Stormwater Best Management Handbook-Construction or the Caltrans Stormwater Quality Handbook Construction Site BMPs Manual.</p> <p>MM HYD-1b: Prior to issuance of building permits for the proposed project, the project applicant shall prepare a Stormwater Control Plan that</p>	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>includes post-construction stormwater controls in the site design to satisfy requirements of the Phase II Small MS4 Permit. This shall include a review of the final Stormwater Control Plan by the City of American Canyon to ensure the required controls are in place.</p> <p>Provision E.12.h of the MS4 Permit requires an operation and maintenance program be implemented for post-construction stormwater management features. Responsible parties and funding for long-term maintenance of all BMPs must be specified. This plan shall specify a regular inspection schedule of stormwater treatment facilities in accordance with the requirements of the MS4 Permit. Reports documenting inspections and any remedial action conducted shall be submitted regularly to the City for review and approval.</p>	
Impact HYD-2: The proposed project would not deplete groundwater supplies or interfere substantially with groundwater recharge.	No mitigation is necessary.	Less than significant impact.
Impact HYD-3: The proposed project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems.	No mitigation is necessary.	Less than significant impact.
Section 3.8 – Land Use		
Impact LU-1: The proposed project would not conflict with the City of American Canyon General Plan.	No mitigation is necessary.	Less than significant impact.
Impact LU-2: The proposed project would not conflict with the Napa County Airport Industrial Area Specific Plan.	No mitigation is necessary.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
<p>Impact LU-3: The proposed project’s landscaping and detention basins may conflict with the Napa County Airport Land Use Compatibility Plan.</p>	<p>MM LU-3: Prior to issuance of the first building permit, the project applicant shall retain a qualified biologist to prepare a wildlife management plan for the landscaping and storm water detention basins. The plan shall incorporate applicable Federal Aviation Administration guidance for wildlife management and provide recommendations for the design and operation of the landscaping and storm water detention basins to ensure that they do not serve as attractants for wildlife or large flocks of birds that may be potentially incompatible with aviation operations. As part of plan development, the applicant shall consult with Napa County Airport representatives. The City of American Canyon shall confirm that the wildlife management plan’s recommendations are reflected in the design and maintenance plans for the landscaping and storm water detention basins. The plan shall:</p> <ul style="list-style-type: none"> • If necessary, refine or adapt water management designs to comply with the guidance set forth FAA guidance. Once developed, the project proponent shall provide copies of its stormwater management plans to the airport management for review by an FAA qualified Wildlife Biologist to confirm that the proposed slope design and bio retention plantings are consistent with Advisory Circular 150/5200-33B. • Refine or adapt project landscape designs to include materials that will not be attractive to potentially hazardous wildlife. The project proponent should provide copies of its proposed landscape plans and plant palettes to airport management for review by an FAA-qualified Wildlife Hazard Damage Biologist to confirm that the proposed landscaping will be consistent with airport operations. • Develop design standards to address aviation and wildlife hazard management concerns. The project applicant shall develop specific design standards for incorporation into lease documents that address wildlife hazard management. For example, site users shall be directed to store all refuse in covered bins or dumpsters and equip signs and light standards with non-perching devices. • Establish a process for ongoing coordination with the Napa County Airport staff regarding wildlife management, facility management 	<p>Less than significant impact.</p>

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	procedures, and airport operations so that changes in wildlife activity during or following project construction can be identified and addressed.	
Section 3.9 – Noise		
Impact NOI-1: Implementation of the Project would result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.	MM NOI-1: During construction activities, the following noise attenuation measures and practices shall be implemented: <ul style="list-style-type: none"> Construction activities shall be limited to the hours between 7 a.m. to 7 p.m. The City of American Canyon shall have the discretion to permit construction activities to occur outside of allowable hours if compelling circumstances warrant such an exception (e.g., weather conditions necessary to pour concrete). All construction equipment shall use noise-reduction features (e.g., mufflers and engine shrouds) that are no less effective than those originally installed by the manufacturer. If no noise reduction features were installed by the manufacturer, then the contractor shall require that at least a muffler be installed on the equipment. Construction staging and heavy equipment maintenance activities shall be performed a minimum distance of 300 feet from the nearest residence, unless safety or technical factors take precedence (e.g., a heavy equipment breakdown). During the grading phase of the off-site utility work, temporary sound barriers shall be utilized to block the line of site from operating heavy construction equipment to any residence within 150 feet of an active construction area. 	Less than significant impact.
Impact NOI-2: The project would not expose persons to or generate excessive groundborne vibration or groundborne noise levels.	No mitigation is necessary.	Less than significant impact.
Impact NOI-3: Implementation of the Project would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.	No mitigation is necessary.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact NOI-4: The proposed project may result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.	Implement Mitigation Measure NOI-1.	Less than significant impact.
Impact NOI-5: The project would not expose people residing or working in the project area to excessive noise levels due to being located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport.	No mitigation is necessary.	Less than significant impact.
Section 3.10 – Public Services and Utilities		
Impact PSU-1: The proposed project would not result in a need for new or expanded fire protection facilities that may have physical impacts on the environment.	No mitigation is necessary.	Less than significant impact.
Impact PSU-2: The proposed project would not result in a need for new or expanded police protection facilities that may have physical impacts on the environment.	No mitigation is necessary.	Less than significant impact.
Impact PSU-3: The proposed project would be served with sufficient water supplies available from existing entitlements and resources.	No mitigation is necessary.	Less than significant impact.
Impact PSU-4: The proposed project would be served with adequate wastewater treatment capacity.	No mitigation is necessary.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact PSU-5: The proposed project would not result in a need for new or expanded offsite storm drainage facilities.	No mitigation is necessary.	Less than significant impact.
Impact PSU-6: The proposed project would generate substantial amounts of solid waste that may result in inadequate landfill capacity or conflict with statutes or regulations concerning solid waste.	MM PSU-6: Prior to issuance of building permits, the project applicant shall prepare and submit a Waste Management Plan to the City of American Canyon for review and approval. The plan shall estimate volume or weight of project construction and demolition debris; materials type to be generated; the maximum volume or weight of such materials that can feasibly be diverted via reuse or recycling, the vendor or facility proposed to use, collect, or receive that material; the estimated volume or weight of construction and demolition materials that will be land filled; and project square footage. The approved plan shall be implemented during construction activities.	Less than significant impact.
Impact PSU-7: The proposed project would not result in the unnecessary, wasteful, or inefficient use of energy.	No mitigation is necessary.	Less than significant impact.
Section 3.11 – Transportation		
Impact TRANS-1: The proposed project would contribute to unacceptable traffic operations under Existing Plus Project Conditions.	MM TRANS-1a: To mitigate this significant impact of greater trip generation from more intense land uses on the project site, the Applicant shall establish a Transportation Demand Management (TDM) program. The intent of the TDM program is to ensure that traffic volumes generated by Project do not exceed that which would occur from warehouse-only uses. Notwithstanding its intent, the applicant shall implement this mitigation measure regardless of the mix of uses (warehouse-only or warehouse/industrial/office) that is eventually built. The Applicant shall enter into a TDM Agreement prior to the issuance of the first building permit. The TDM Agreement shall require that an effective TDM program be implemented prior to the first certificate of occupancy and be subjected to on-going periodic monitoring thereafter. The TDM Agreement shall also include a financial guarantee satisfactory to the City. The City will deem the TDM program to be effective if the	Significant unavoidable impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>monitoring results indicate that AM peak-hour volumes are no more than 780 vehicles (and PM peak-hour volumes are no more than 704 vehicles).</p> <p>The TDM program shall be implemented at the applicant's cost, with no cost to the City, regardless of the eventual mix of uses and shall at a minimum include a permanent vehicle counting station at the single public access point. Examples of measures that may be considered as part of an effective TDM program include but are not limited to the following:</p> <ul style="list-style-type: none"> • Starting and ending workday shifts during off-peak hours (i.e., not between 7:00 a.m. to 9:00 a.m. or 3:00 p.m. to 6:00 p.m.)—if done for the manufacturing use, this would decrease overall AM peak-hour vehicle trips from 1,310 to 510 and PM peak-hour vehicle trips from 1,243 to 479. • Implement shuttle service to key employment centers or park-and-ride lots in the area for those employees whose workday shift start during peak hours. • Car-share program • Shuttles to regional transit • Transit subsidies • Carpool/vanpool subsidies • Employer-owned/sponsored vanpools • Flex-time and telecommute programs • Use of rail to transport employees and/or the delivery of goods <p>The Applicant shall retain a transportation planning/engineering consultant to analyze the effectiveness of the TDM program in a written report. The TDM Report will include data collected from the permanent vehicle counting station and a determination of employee commute methods, which shall be informed by surveying all employees working at the site. The TDM Report shall be submitted to the City on a periodic on-going basis and it shall form the basis of on-going determinations by the City as to the effectiveness of the TDM program. So long as the City deems the TDM program effective (i.e. when monitoring results indicate that AM peak-hour volumes are no more than 780 vehicles and PM peak-</p>	

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>hour volumes are no more than 704 vehicles), the additional, potentially significant traffic impacts related to the mix of warehouse, industrial and office are mitigated to a less than significant level. At any time that the City determines the TDM program is not effective, then this additional significant traffic impact shall be mitigated by the implementation of Mitigation Measure TRANS-1b.</p> <p>MM TRANS-1b: If at any point the City determines the TDM program established as part of the Mitigation Measure TRANS-1a is not effective to reduce peak-hour traffic so that it does not exceed the TDM thresholds (780 vehicles during the AM peak hour and 704 vehicles during the PM peak hour), then the Applicant shall pay an additional amount for each and every peak-hour trip that is recorded by the counting device that exceeds the TDM threshold, based on the method described in the EIR Impact Analysis for this mitigation measure. The “on-going TIF” paid pursuant to this mitigation measure is in addition to the “one-time TIF” paid at the time of issuance of the first building permit in accordance with Mitigation Measure TRANS-1c. This mitigation measure shall be incorporated into the TDM agreement required as part of MM TRANS-1a.</p> <p>MM TRANS-1c: The project applicant will be responsible for paying the City’s Traffic Impact Fee for the proposed development. The funds collected under this program would be used to make improvements to a number of intersections throughout American Canyon which improvements would lessen the significant cumulative transportation impacts. However, because these projects for which the Applicant would make a fair share contribution pursuant to this mitigation measure rely upon a discretionary funding and approval by a third party (Caltrans), the impact would remain significant and unavoidable.</p> <p>MM TRANS-1d: Prior to issuance of the first certificate of occupancy for the proposed project, the project applicant shall construct the following improvements along South Kelly Road, or, at the sole discretion of the City, enter into an off-site improvement agreement and prove an</p>	

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>acceptable financial guarantee ensuring that these improvements will be completed:</p> <p>(1) At the intersection of SR-29 at South Kelly Road:</p> <ul style="list-style-type: none"> - Northbound approach: 3 through lanes, 2 left-turn lanes, 1 right-turn lane - Southbound approach: 3 through lanes, 1 left-turn lane, 1 right-turn lane - Eastbound approach: 1 through lane, 2 left-turn lanes, 1 right-turn lane - Westbound approach: 1 through lane, 2 left-turn lanes, 1 right-turn lane <p>(2) At the intersection of South Kelly Road and Devlin Road:</p> <ul style="list-style-type: none"> - Northbound approach: 1 through lane, 1 right-turn lane - Southbound approach: 1 through lane, 1 left-turn lane - Private driveway: None - Westbound approach: 1 left-turn lane, 1 right-turn lane <p>(3) South Kelly Road, between Devlin Road and SR-29 intersections:</p> <ul style="list-style-type: none"> - 2 westbound receiving lanes, 1 eastbound lane, and 1 two-way left-turn lane. <p>The length of the turn lanes on SR-29 shall be in accordance with the Caltrans Highway Design Manual requirements for a 55 mph highway, and shall accommodate sufficient vehicle storage length under Existing Plus Background Plus Project conditions such that the intersection operates at least LOS D.</p> <p>The length of the turn lanes on South Kelly Road shall accommodate sufficient vehicle storage length under Existing Plus Background Plus Project conditions such that the intersection operates at least LOS D.</p> <p>The Applicant shall fund 100 percent of the cost of this improvement. To the extent this improvements represent oversizing that is over and above what would be necessary to mitigate the impacts of the project, the</p>	

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>Applicant shall be eligible for reimbursement for costs above its fair share from other nearby private developments that will also contribute traffic to this intersection. Prior to incurring any expenses for they may be eligible for reimbursement, the Applicant shall enter into a reimbursement agreement with the City.</p> <p>The implementation of this mitigation measure would be done in conjunction with construction that has already been planned and approved. The additional construction activity may incrementally increase construction traffic, noise, and air emissions in the activity area, but would not change the analysis, conclusions, or mitigation measures in this EIR. Construction activity associated with this mitigation measure would be required to comply with all applicable local and state laws and regulations such as dust suppression, limitations on hours of construction, stormwater runoff controls, and other similar requirements designed to reduce or avoid environmental impacts.</p> <p>Because the South Kelly Road intersection at SR-29 is impacted in the PM peak hour as a result of downstream queues, the impact at this intersection would remain significant and unavoidable with the implementation of this mitigation measure without changes to SR-29 through the City of American Canyon (between Napa Junction Road and American Canyon Road).</p> <p>As a result of the implementation of this mitigation measure, the significant impacts at the South Kelly Road intersection with Devlin Road are reduced to a less than significant level.</p> <p>MM TRANS-1e: Prior to issuance of the first construction permit for each building in the proposed project, the project applicant shall pay a fair share contribution of the estimated construction costs for regional projects on the state highway system. The fair share shall be calculated at the time payment is required, based on the projected traffic of the proposed use of the building, and the estimated cost of the construction at that time.</p>	

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
	<p>The SR-12-29/SR221-Soscol Ferry Road Flyover Ramp is currently estimated at \$40 million according to the Draft Environmental Impact Report (dated March 2015).</p> <p>Because this project for which the Applicant would make a fair share contribution pursuant to this mitigation measure rely upon discretionary funding and approval by a 3rd party (Caltrans), the impact would remain significant and unavoidable. The aforementioned parties (Caltrans, NCTPA, and the City of American Canyon, at minimum) will need to develop formal agreements regarding the funding sources for these projects and the mechanism for collecting and transferring the funds for this mitigation measures to be feasible.</p> <p>MM TRANS-1f: Prior to issuance of the first construction permit for each building in the proposed project, the project applicant shall pay a fair share contribution of the estimated construction costs for regional projects on the state highway system. The fair share shall be calculated at the time payment is required, based on the projected traffic of the proposed use of the building, and the estimated cost of the construction at that time.</p> <p>The grade-separated Airport Boulevard/SR-12-29 Interchange Project planned by Caltrans is currently estimated at \$73 million according to the NCTPA SR-29 Gateway Corridor Improvement Plan (dated February 2014).</p> <p>Because this project for which the Applicant would make a fair share contribution pursuant to this mitigation measure rely upon discretionary funding and approval by a third party (Caltrans), the impact would remain significant and unavoidable. The aforementioned parties (Caltrans, NCTPA, and the City of American Canyon, at minimum) will need to develop formal agreements regarding the funding sources for these projects and the mechanism for collecting and transferring the funds for this mitigation measures to be feasible.</p>	

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact TRANS-2: The proposed project would contribute to unacceptable traffic operations under Existing Plus Background Plus Project Conditions	Implement Mitigation Measures TRANS-1a, TRANS-1b, TRANS-1c, TRANS-1d, TRANS-1e, TRANS-1f, and: MM TRANS-2a: Prior to issuance of the first certificate of occupancy for the proposed project or when monitoring determines that it is warranted, the project applicant shall construct improvements at the intersection of South Kelly Road/Devlin Road (#1). The improvements shall consist of the installation of a signal and a westbound left-turn pocket on South Kelly Road, with a reimbursement agreement for the cost in excess of its fair share of the signal cost, thus improving the intersection LOS to acceptable conditions. The roadway change to westbound South Kelly Road is currently proposed as part of Mitigation Measure TRANS-1d.	Significant unavoidable impact.
Impact TRANS-3: The proposed project would contribute to unacceptable traffic operations under Cumulative Conditions.	Implement Mitigation Measures TRANS-1a, TRANS-1b, TRANS-1c, TRANS-1d, TRANS-1e, TRANS-1f, and TRANS-2a.	Significant unavoidable impact.
Impact TRANS-4: The proposed project may conflict with an applicable congestion management program.	Implement Mitigation Measures TRANS-1a, TRANS-1b, TRANS-1c, TRANS-1d, TRANS-1e, TRANS-1f, and TRANS-2a.	Significant unavoidable impact.
Impact TRANS-5: The proposed project would not change air traffic patterns associated with Napa County Airport.	No mitigation is necessary.	Less than significant impact.
Impact TRANS-6: The proposed project would potentially substantially increase hazards due to a design feature or incompatible uses.	MM TRANS-6: Prior to issuance of building permits for each building, the project applicant shall prepare and submit a site plan to the City of American Canyon for review and approval that depicts a minimum number of ADA-accessible parking spaces at each building; the internal stop signs depicted on Exhibit 3.11-14; and the bike racks or lockers at strategic locations to serve the project buildings. The approved plans shall be incorporated into the improvement plans for the project.	Less than significant impact.
Impact TRANS-7: The proposed project would provide adequate emergency access.	No mitigation is necessary.	Less than significant impact.

Table ES-1 (cont.): Executive Summary Matrix

Impacts	Mitigation Measures	Level of Significance After Mitigation
Impact TRANS-8: The proposed project may conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities.	MM TRANS-8: Prior to issuance of building permits for each building, the project applicant shall prepare and submit a site plan to the City of American Canyon for review and approval that depicts pedestrian facilities and crosswalks that facilitate safe, accessible pedestrian travel between the internal roadways and the building entrances. The approved plans shall be incorporated into the improvement plans for the project.	Less than significant impact.
Impact TRANS-9: Construction of the proposed project may conflict with adopted policies, plans, or programs regarding construction activities.	<p>MM TRANS-9: The project applicant shall develop and submit a Construction Management Plan (CMP) to the City of American Canyon prior to commencement of any construction activities, including construction activities associated with the transportation mitigation measures. The provisions of a CMP shall specifically address the characteristics of construction-related traffic associated with development. Such plans identify construction phasing and the level and type of construction-related traffic. The CMP shall identify construction truck routes to access the project site, lane closures on existing public streets (if needed) including a plan for any necessary traffic control measures, and on-site staging requirements, and other information as required by the City.</p> <p>Once the construction truck routes have been approved, but before construction has started, the applicant shall conduct a survey of existing conditions of pavement along the approved truck routes and submit documentation of the results to the City. When construction has been substantially completed such that there will be no further construction truck trips, the applicant shall re-survey the construction truck routes. The project applicant shall be responsible for repairing damage to roadways used for construction vehicle access to the site and attributable to the project so that the roadway conditions are returned to their pre-construction conditions (or better) as documented in the pre-construction survey along the truck routes following the construction of the project.</p>	Less than significant impact.

Executive Summary.....	1
Purpose.....	1
Project Summary	1
Project Location.....	1
Project Description.....	1
Project Objectives.....	2
Significant Unavoidable Adverse Impacts	2
Summary of Project Alternatives.....	4
No Project Alternative	4
Reduced Density Alternative	4
Warehouse Alternative.....	4
Areas of Controversy	4
Disagreement Among Experts.....	5
Potentially Controversial Issues.....	5
Public Review of the Draft EIR	5
Executive Summary Matrix.....	6
 Table ES-1: Executive Summary Matrix	 7

Water Supply Assessment for Phase II of the Napa Logistics Park Project, American Canyon, California

Prepared for:

First Carbon Solutions



Revised September 2015

Prepared by:



Attachment 3

Revised September 9, 2015

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by



A handwritten signature in blue ink, appearing to read "Scott Brown", written over a horizontal line.

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TABLE OF CONTENTS

PREFACE	1
EXECUTIVE SUMMARY	3
1 INTRODUCTION	5
1.1 <i>Regulatory Background</i>	5
1.2 <i>Project Location</i>	6
1.3 <i>Existing Conditions</i>	8
1.4 <i>Proposed Project</i>	8
2 WATER SUPPLY	11
2.1 <i>State Water Project</i>	11
2.1.1 <i>Table A Allocation</i>	11
2.2 <i>Water from the City of Vallejo</i>	12
2.2.1 <i>Vallejo Permit Water (Raw)</i>	12
2.2.2 <i>Vallejo Treated Water (Potable)</i>	13
2.2.3 <i>Vallejo Emergency Water (Raw)</i>	13
2.3 <i>Groundwater</i>	13
2.4 <i>Other Sources of Potable Supply</i>	14
2.4.1 <i>Dry-Year Water Bank</i>	14
2.4.2 <i>Turn-back Water Pool Program</i>	14
2.4.3 <i>Napa Treated Water</i>	14
2.4.4 <i>Dry Year Transfer Program</i>	15
2.4.5 <i>Yuba Accord</i>	15
2.5 <i>Recycled Water</i>	15
2.5.1 <i>American Canyon Recycled Water</i>	15
2.5.2 <i>Napa Sanitation District Recycled Water</i>	16
3 WATER DEMAND	17
3.1 <i>Project Demand</i>	17
3.1.1 <i>Potable Water</i>	17
3.1.2 <i>Recycled Water</i>	19
3.2 <i>Project Demand Comparison to UWMP</i>	19
3.2.1 <i>Potable Water</i>	19
3.2.2 <i>Recycled Water</i>	21
3.3 <i>System-wide Demand</i>	22

3.3.1	Recent Actual System Demand	22
3.3.2	Adjustments to Projected System Demand	25
3.3.3	System-wide Demand Summary	29
4	SUPPLY AND DEMAND COMPARISON	32
4.1	<i>Potable Water</i>	33
4.1.1	Normal Year	33
4.1.2	Single Dry Year	33
4.1.3	Multiple Dry Years	34
4.2	<i>Potable Water Deficiency Resolution</i>	38
4.2.1	SWP Carryover Water	38
4.2.2	Advanced Table A Program	39
4.2.3	Drought-year Demand Reductions	40
4.2.4	Open Market Purchases	41
4.3	<i>Recycled Water</i>	43
4.4	<i>Summary</i>	44
5	ZERO WATER FOOTPRINT POLICY	46
5.1	<i>Project ZWF Compliance</i>	46
5.2	<i>City-wide Compliance</i>	47
6	LIMITATIONS	48
7	REFERENCES	49

LIST OF TABLES

Table 1	Current sources of water supply for American Canyon.	12
Table 2	Estimated water demand for the Napa Logistics Project, Napa County, California.	18
Table 3	Estimated NLP water demand compared to assumptions within the 2010 American Canyon UWMP.	20
Table 4	Recent potable and recycled water usage for American Canyon.	23
Table 5	Projected potable, recycled, and total water demand for American Canyon through 2035, as presented in the 2010 UWMP.	25
Table 6	Revised system-wide recycled water projections, City of American Canyon, 2015-2035.	26
Table 7	Comparison of revised system-wide recycled water projections to projections in the 2010 UWMP.	27
Table 8	Revised system-wide potable water projections, 2015-2035.	28
Table 9	Revised projections of total, potable, and recycled water demand for American Canyon, 2015 - 2035.	30
Table 10	Supply reliability for various American Canyon water sources.	32
Table 11	Projected water supply for American Canyon for various year types.	36
Table 12	Comparison of potable and recycled water supply and demand under various year-type scenarios.	37
Table 13	Recent SWP carryover water supply for the City of American Canyon.	38
Table 14	Projected drought-year demand savings.	41
Table 15	Potable water deficiency resolution for dry- and multi-dry-year scenarios.	42
Table 16	Summary of potential recycled water demand, by sector.	44

LIST OF FIGURES

Figure 1	Regional location map for the Napa Logistics Park Project, American Canyon, California.	7
Figure 2	Landscape plan for the Napa Logistics Park Project, American Canyon, California.	9
Figure 3	Existing and planned recycled water system for the City of American Canyon, California.	10
Figure 4	Recent total, potable, and recycled water demand for the City of American Canyon, Napa County, California.	24
Figure 5	Comparison of projected total, potable, and recycled water demand for the City of American Canyon, Napa County, California.	31



Preface to the Water Supply Assessment for The Napa Logistics Park Phase 2 Project

PREFACE

This Water Supply Assessment (WSA)ⁱ was prepared in order to inform the decision making process currently being undertaken for the subject project pursuant to the California Environmental Quality Actⁱⁱ. In general, the purpose of this WSA is to demonstrate that the water demands of the subject project can be met by the City of American Canyon.

This WSA is based partially on analysis contained in the City's 2010 Urban Water Management Plan (2010 UWMP). The 2010 UWMP makes certain assumptions and forecasts about future water demands that are anticipated to occur as the result of new development in accordance with its General Planⁱⁱⁱ. The 2010 UWMP further analyzes the supplies that are anticipated to be available to meet those demands and it draws conclusions about their sufficiency in various planning time horizons. As periodically required, the City has begun to update its 2015 UWMP - that effort will be completed in mid-2016.^{iv}

The purpose of a WSA and an UWMP are distinctly different. An UWMP is a broad tool used for long-range urban planning and updated regularly. An UWMP is inherently forward-thinking and it acts as the City's "General Plan" for water. In the case of the forthcoming 2015 UWMP, it will also evaluate potential solutions for increasing the City's long-term water supply portfolio (as called for in City's 2014-15 Strategic Plan).

In contrast, a WSA is a one-time technical study used to help analyze potential environmental impacts of a specific project. In particular, this WSA analyzes whether the City's known supplies are sufficient to meet the anticipated demands of the subject project (along with other future growth) under various scenarios. This WSA makes use of multiple, conservative assumptions to analyze a worst-case scenario. Importantly though,

ⁱ Section 10910 of the California Water Code

ⁱⁱ Section 21080.1 of the Public Resources Code.

ⁱⁱⁱ 1994 *General Plan for the City of American Canyon*

^{iv} Section 10621 of the California Water Code

in contrast to the forthcoming 2015 UWMP, it does not explore potential future initiatives that may be undertaken by the City to improve the reliability of its long-term water supply portfolio.

As a result of the ongoing drought conditions currently being experienced state-wide, some of the assumptions in the 2010 UWMP have been adjusted for use in this WSA. These adjustments all present a more conservative prospectus of worst-case future scenario in order to more fully inform the environmental review process.

Most notably, the WSA assumes a worst-case reliability of supply from the State Water Project of only 5% of the contractually available amount (the 2010 UWMP assumes a worst case of 22%). Additionally, future potable water demand is projected to increase, despite the City's 2007 Zero Water Footprint Policy (whose implementation acts to cap total system demand through offset of new potable water demands by reductions elsewhere in the system).

The result of these adjustments (and others) is to effectively discount the amount of supplies deemed available for the subject project while simultaneously over-stating the amount of future demands that are likely to be realized. It is noteworthy that while this more conservative view is appropriate for a WSA, it would not necessarily be appropriate as the basis of the forthcoming 2015 UWMP.

Importantly, this WSA verifies that the City has adequate supplies to serve the subject project. Moreover, because the subject project's implementation of the ZWF Policy through expansion of the off-site recycled water system will result in the reduction of existing potable water demands and increase of recycled water demands, the subject project will mitigate a potentially significant impact to a less than significant level.

Jason Holley, P.E.
Public Works Director
City of American Canyon

EXECUTIVE SUMMARY

Napa Logistics Park (NLP) is a proposed project near the Napa County Airport that would develop a currently vacant parcel in American Canyon. Phase I of the project, a 646,000 square foot warehouse, was previously permitted and is currently under construction. Phase II of the project would include additional warehouse space, an office complex, and a manufacturing facility on 129 acres, along with an additional 44 acres reserved for wetland preservation and stormwater detention facilities.

This Water Supply Assessment (WSA) presents the proposed potable and recycled water use for the project, and assesses the potential impact to citywide supply and demand projections through the year 2035 for the City of American Canyon. While the intent of this document (and the associated EIR) is to address only Phase II of the NLP project, Phase I is also considered for documentation and water supply/demand accounting purposes, and because implementation of Phase II would affect the use of recycled water for Phase I.

The NLP project would be served by water provided by the City of American Canyon. In total, the project (Phases I and II) would use up to 40 acre-feet per year (afy) of potable water to serve warehousing, office, and manufacturing uses for 5 buildings at the site, and up to 88 afy of recycled water for landscape irrigation and to support non-potable indoor uses.

Phase I of the NLP project, previously permitted and currently under construction, currently supplies irrigation needs with groundwater pumped from an on-site well¹. As part of NLP Phase II, a connection to the City's recycled water system will be established to support non-potable demand for both phases, and pumping from the well (approximately 12 afy) will be discontinued.

The NLP Project would use less potable water over the long-term than was assumed in the demand analysis in the City's Urban Water Management Plan (UWMP) for the parcel (28 afy less for Phase I and 94 afy less for Phase II). In addition, compliance with the City's Zero Water Footprint policy would offset the Project's potable demand through off-site

¹ Groundwater is also used to support irrigation of a nearby off-site landscaped area that was previously supported by potable City supply, as part of compliance with the City's Zero Water Footprint policy. As with on-site irrigation for Phase I, this will be converted to recycled water use following completion of Phase II of the NLP project.

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

implementation of project-funded water conservation measures totaling at least 40 afy (Phases I and II combined).

Recent drought conditions suggest that the City's water supply during dry periods is less than was assumed in the UWMP. The analysis in this WSA accounts for these more severe dry-year reductions in water supply, adjusting anticipated future supply based on extremely low deliveries over the past three years. It also accounts for changes in potable water demand as a result of less-than-expected recycled water use in recent years².

The revised citywide supply/demand analysis in this WSA anticipates sufficient supply in all normal years, but shortfalls in water supply during dry-year scenarios in 2015-2020 and 2030-2035, and in multi-year droughts for 2015 and 2035. State Water Project carryover water is anticipated to be available in amounts great enough to accommodate these deficiencies. In addition, the City may choose to make use of other options available, including Advanced Table A Water, drought demand restrictions, or water purchases on the open market. As such, adequate supply is projected to be available under all planning scenarios.

The Project would significantly increase the utilization of the City's recycled water supply, both on-site and by providing recycled water to other areas of the southern portion of the Napa County Airport Industrial Area. The project would increase recycled water use relative to 2014 by over 50 percent, and comprise as much as 7 percent of long-term goals for total recycled water use within the City. The City produces recycled water to meet demand and, along with recycled water supplied by the Napa Sanitation District, has sufficient long-term supply capacity to meet projected demand.

² Total water demand for a given year is assumed to be the same as projected in the UWMP. Recycled water use offsets potable water demand, so less-than-expected recycled water use results in higher-than-expected potable water demand.

1 INTRODUCTION

This report analyzes the projected water supply and demand for the Napa Logistics Park (NLP or Project) project in American Canyon, California. The Water Supply Assessment (WSA) is intended to support environmental planning documentation for Phase II of the project. Phase I of the NLP project is also included for documentation and water supply accounting purposes, but has been previously entitled and is currently under construction.

1.1 Regulatory Background

Section 10910 of the California Water Code (as revised by Senate Bill 610, or SB610) requires: "the city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, ... [to] identify a water system...that may supply water for the project" and to prepare a WSA to address the increased water use over existing conditions. The WSA is intended to:

1. Identify the water system or systems that would (or may) supply water to the project;
2. Compare project water demands with those projections included in the most-recently adopted Urban Water Management Plan or Plans for those service providers; and
3. Assess whether the public water system's total projected water availability for the entire system(s) during normal, single dry, and multiple dry years over a 20-year period will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses (including agricultural and manufacturing uses).

Within this assessment, California Water Code Section 10910(4)(d) requires a discussion of existing water supply entitlements, water rights, or water service contracts relevant to the public water system(s). Also, Section 10910 (2)(f) requires that "If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment: (1) a review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project (2) a description of any groundwater basin or basins from which the proposed project will be supplied."

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT, AMERICAN CANYON, CALIFORNIA

The Napa Logistics Project is an industrial/warehouse complex on 173 acres that would employ up to 5,734 people. Section 10912(a) of the California Water Code outlines the types of projects requiring a Water Supply Assessment, including:

- “A proposed industrial, manufacturing, or processing plant or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.”

As such, the NLP project requires a WSA. See Section 3.1 for a discussion of estimated water demand for the Project.

Water supply for the proposed project would be served by the City of American Canyon (“City”). Water sources available to the City are discussed in Section 2. The City prepared an Urban Water Management (“UWMP”) in 2010 (Winzler and Kelly, 2011) that projected water supply and demand within the service district through 2035. While the Napa Logistics Park Project was not explicitly considered in the 2010 UWMP, the UWMP did generally account for projected increases in demand associated with expected development in the Napa County Airport Industrial Area, including the parcel for the Project. Section 3.2 discusses the differences in potable and recycled water demand of the proposed project area compared to the assumed demand.

Section 4 compares the system-wide supply and demand for the City to assess whether there is sufficient supply to support existing water uses, the Project, and other planned future uses through 2035.

1.2 Project Location

The proposed project is located in the northern portion of the City of American Canyon in Napa County, California. The project site is located within the southern portion of the Napa County Airport Industrial Area, east of State Route 29 and south of the Napa County Airport (Figure 1). The previously entitled Phase I of this project, a warehouse currently under construction, borders the project to the east, and undeveloped land and the Napa River lowlands are to the west of the project. To the south is undeveloped land proposed for industrial use and a 9-acre lumberyard (FCS, 2015).

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

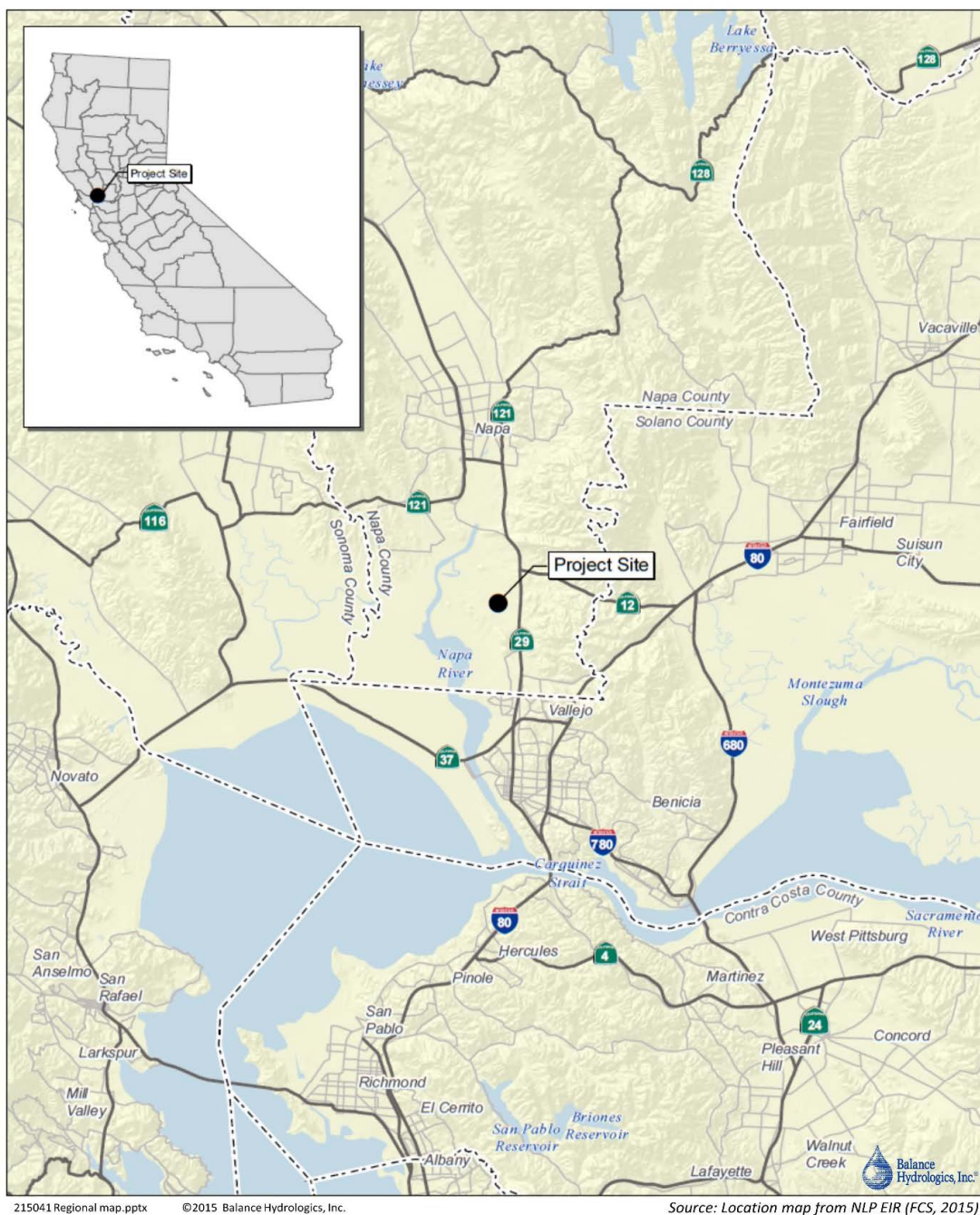


Figure 1 Regional location map for the Napa Logistics Park Project, American Canyon, California.

1.3 Existing Conditions

The project site is currently undeveloped land with grassy and weedy vegetation and several unpaved roads. Seasonal marshland and a tributary of the slough at the mouth of Fagan Creek are also present on the site. The site is currently designated as "Industrial" in the American Canyon General Plan, and as "Business/Industrial Park" in the Napa County Airport Industrial Area Specific Plan. The proposed project is consistent with both land-use designations.

1.4 Proposed Project

The proposed project entails developing the 173-acre Phase II project site to create four development lots, detention areas, and a wetland preservation area. Figure 2 shows the proposed project layout, as evaluated in the project EIR (FCS, 2015).

The development of the 173 acres that constitute Phase II would include new industrial uses, infrastructure, and wetland preservation areas. Total build-out potential would be 2,270,640 square feet of warehouse, distribution, E-commerce, manufacturing, and accessory retail/office uses. This square footage would be in addition to the 646,000 square feet approved for Phase I of this development. The applicant is seeking flexibility on the number of lots and the allocation of building square footage to each lot to be able to accommodate the needs of potential tenants. The maximum area of 2,271,000, square feet would not be exceeded for the overall project, but actual floor area will depend on the design of individual buildings, which may include multiple stories. The project Environmental Impact Report assumes the following square footages be assigned to each use:

- Warehousing: 1,171,000 square feet
- Manufacturing: 1,000,000 square feet
- General Office: 100,000 square feet

Anticipated water demands associated with these uses are discussed in Section 3.1. One key feature of the project with respect to water supply is the construction of a recycled-water connection to the existing American Canyon infrastructure at Green Island Road (see Figure 3).

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA



Figure 2 Landscape plan for the Napa Logistics Park Project, American Canyon, California. Landscaped areas around buildings and non-potable indoor water would be supplied by recycled water. Wetland and detention areas would not require supplemental water. Phase I of the NLP project was previously permitted and is currently under construction.

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

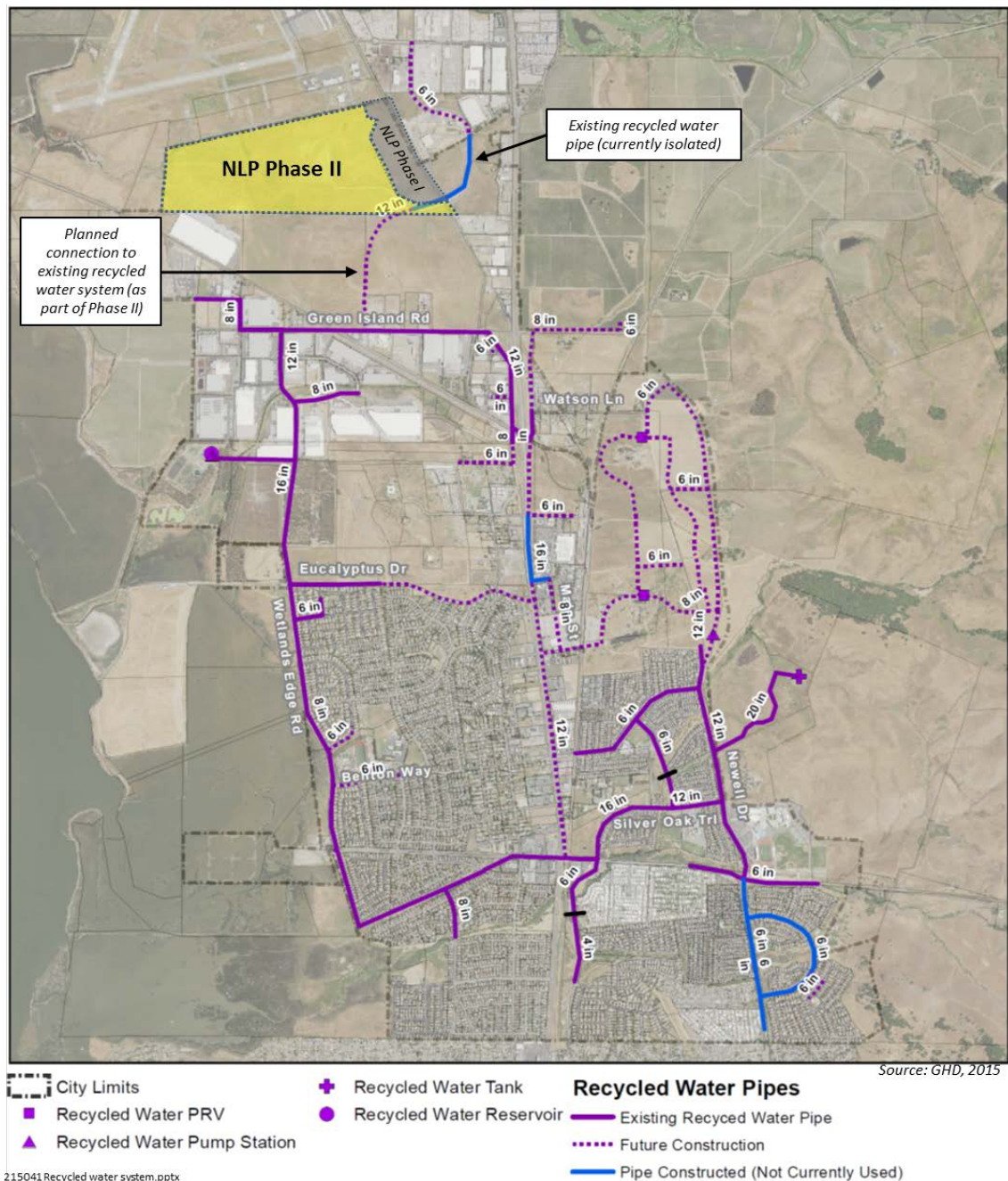


Figure 3 Existing and planned recycled water system for the City of American Canyon, California. The Napa Logistics Park project would connect to the existing system at Green Island Road.

2 WATER SUPPLY

American Canyon obtains its water supply from a variety of sources, all of which (except for recycled water) are imported from outside of the City. All of the City's imported water comes through the North Bay Aqueduct (NBA) system. The following sections summarize the various sources of water for American Canyon (see also Table 1). These descriptions were summarized from American Canyon 2010 Urban Water Management Plan ("2010 UWMP"; Winzler and Kelly, 2011).

2.1 State Water Project

A significant portion of the City's supply is obtained through various indirect contracts for water from the State Water Project (SWP). The Napa Flood Control and Water Conservation District (District) is the State Water Contractor with the California Department of Water Resources (DWR), and the City receives its water through subcontracts with the District.

2.1.1 TABLE A ALLOCATION

In January 1967, the American Canyon County Water Agency³ entered into an agreement with the District for water supply from the North Bay Aqueduct. In 2010, the agreement allowed for the delivery of up to 5,200 acre-feet of water per year⁴. This contract runs through 2035 with provisions for extension. The actual amount of SWP water available to the City under the "Table A" allocation process (the method used by DWR to allocate water in the SWP system) varies from year to year due to hydrologic conditions, water demands of other contractors, SWP facility capacity, and environmental/regulatory requirements. Deliveries have varied between 5% (in 2014) and 100% (last occurring in 2006) of the contracted amount.

³ A predecessor agency to the City of American Canyon, which wasn't incorporated until 1992.

⁴ 500 AF of this water was obtained through a purchase of water, by the Napa Sanitation District, from Kern County Water Agency in 2000.

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

Table 1 Current sources of water supply for American Canyon.

Source	Contracted Volume/Capacity (afy)
State Water Project ('Table A' allotment) ¹	5,200
Vallejo Permit Water ²	500
Vallejo Treated Water	Varies ³
Vallejo Emergency Water ⁴	500
Groundwater ⁵	12
American Canyon Recycled Water ⁶	1,000
NSD Recycled Water (northern Airport Industrial Area)	Varies ⁷

Notes:

¹ Includes allotment for American Canyon and additional supply from Kern County Water Agency.

² Non-Table A water.

³ Contracted amount is 2,075 in 2015, and expected to be 2,641 in 2020, and 3,207 in 2025-2035.

⁴ Available only in dry years.

⁵ Temporary use of NLP on-site well to offset Phase II irrigation and irrigation at Devlin Road landscaping until recycled water connection is established. Well capacity is 200 gpm, but supply is assumed to be equal to the amount needed for Phase I irrigation and associated Zero Water Footprint offset. Well water is not available for City water supply, but is a temporary offset for potable supply until recycled water is available at the site.

⁶ Maximum capacity of City's recycled water treatment system, once completed.

⁷ 90 afy in 2015, 150 afy in 2020 and 225 afy for 2025-2035.

2.2 Water from the City of Vallejo

In 1996, the City entered into an agreement with the City of Vallejo to allow the purchase of additional water supply. Vallejo receives its water from a variety of sources, including SWP water and an appropriative water right. Under the Vallejo Agreement, a specific source is identified for Permit Water supply (see 2.2.1, below), but not for Treated or Emergency Water (Sections 2.2.2 and 2.2.3).

2.2.1 VALLEJO PERMIT WATER (RAW)

Vallejo holds an appropriative right for Sacramento Bay-Delta water from the State Water Resources Control Board that pre-dates the construction of the SWP. The City has an agreement with Vallejo for delivery of up to 500 acre-feet of water under this permit. This source of water is more reliable than the City's Table A supply, but the Vallejo Agreement still allows for reductions. Addendum 2 to the 1996 Vallejo Agreement states that "In the event the State Water Resources Control Board, or any other agency, restricts Vallejo's diversion of water [under the appropriative pre-SWP contract] for any reason

whatsoever, American Canyon's diversions will be reduced in the same proportion". As such, the City may not receive its full allotment during dry years⁵.

2.2.2 VALLEJO TREATED WATER (POTABLE)

In 1996, the City entered into an agreement with Vallejo to purchase up to 629 acre-feet of potable treated water supply. This agreement included the option for additional (cumulative) purchases in 5-year increments through 2021. The City exercised options in 2006 and 2011, both for 723 acre-feet (for a current total of up to 2,075 afy), and expects to accept the additional options for 2016 and 2021 (for 566 acre-feet each). Ultimately, this will result in up to a total of 3,207 acre-feet of treated water available for purchase each year by the City from Vallejo, after 2021.

A specific source for Treated Water is not identified in the Vallejo Agreement; thus, the ultimate source of this water is a blend of all of Vallejo's water sources. Under certain conditions, the maximum delivery of this supply may be "reduced in the same proportions as any reduction to Vallejo customers inside the Vallejo City limits"⁶.

2.2.3 VALLEJO EMERGENCY WATER (RAW)

When the City's Table A water allotment is curtailed, the City has the option to purchase up to 500 acre-feet of emergency raw water supply from Vallejo, under an agreement amended in 1996. The 2010 UWMP assumes that this water would be available under a dry-year and multiple-dry-year scenarios, but not during a normal year.

2.3 Groundwater

The City of American Canyon does not currently rely on groundwater as a source of water, though the 2010 UWMP states that the City remains open to the possibility and will consider potential supply opportunities as they present themselves (Winzler and Kelly, 2011). Phase I of the Napa Logistics project is currently using groundwater as a source for on-site and adjacent irrigation to supplement supply until recycled water is available

⁵ Vallejo Permit Water delivery was curtailed in both 2014 and 2015, for example. However, the City received its full allotment before the curtailment took effect.

⁶ Vallejo Water Service Agreement, May 1, 1996 (Appendix E.4 in the 2005 American Canyon UWMP).

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT, AMERICAN CANYON, CALIFORNIA

(see Section 3.1.2)⁷. NLP Phase II proposes to discontinue the use of groundwater as a source of water supply, and therefore detailed information on groundwater outlined in Section 10910(f) of the California Water Code is not required for this Water Supply Assessment.

2.4 Other Sources of Potable Supply

2.4.1 DRY-YEAR WATER BANK

In 2009, the City (along with other SWP contractors) entered into an agreement with DWR to obtain emergency supplies if rice farmers in the Sacramento Valley are willing to make their supplies available. The year-to-year availability of this supply is not known, and thus supplies are not factored in to long-term planning in the 2010 UWMP.

2.4.2 TURN-BACK WATER POOL PROGRAM

DWR has a program for interested SWP contractors called the Turn-back Water Pool Program. SWP contractors may choose to sell Table A water or purchase turn-back pool water that is available through the program. Water from this pool program was not included in the reliability assessment in the 2010 UWMP because the program operates on an as-available basis and long-term availability is not reliable. The amount of pool water available to the City is not a significant amount. During 2009, the City purchased 3 acre-feet of pool water, in 2010 it purchased 17 acre-feet, and in 2012 it purchased 64 acre-feet.

2.4.3 NAPA TREATED WATER

The City has an agreement with the City of Napa for the purchase of treated (potable) water under emergency conditions or when the NBA system is off-line for maintenance or other reasons. This water source is not a water supply and is not included in the reliability assessment in the 2010 UWMP since it is only available during emergencies. Napa treated water, however, does provide operational flexibility (such as providing water to customers even when the City's water treatment plant is off-line for an extended period of time). During 2010, the City purchased 306 acre-feet of treated water when the plant was off-line for maintenance-related issues. Under this informal arrangement,

⁷ The on-site well is not a municipal well, nor is the water available to other municipal water users. Groundwater use does, however, currently offset demand that would otherwise draw on municipal potable supply.

the Napa treated water purchase counts against the City's SWP Table A allotment and is not an additional supply (and is not included in Table 1).

2.4.4 DRY YEAR TRANSFER PROGRAM

During dry years, varying amounts of additional water may be made available to SWP contractors through DWR's Dry Year Transfer Program, which allows for transfers through a combination of crop idling, groundwater substitution and changes in reservoir operation. For example, in June 2014, the American Canyon City Council approved a measure to allow for the purchase of up to 1,200 af of additional supply (for that year) through this program. While this option is available to the City on a per-year authorization, the long-term reliability of this supply is not known and included only as potential supplementary supply for the analysis in this WSA.

2.4.5 YUBA ACCORD

In 2008, DWR adapted the Lower Yuba River Accord, an agreement to settle issues related to in-stream flows in the Yuba River and fisheries habitat. As part of that agreement, DWR is able to purchase water from the Yuba River Water Agency to, in part, offer to participating SWP contractors as a transfer during dry years. The Napa County FCWCD has authorized the execution of Yuba Accord Dry-year Water Purchase Agreement, and the City has the option to purchase water through this agreement in dry years, though at a cost that is considerably higher than under normal conditions. In 2014, the City authorized the purchase of 607 af through this program in response to cover projected water supply shortfalls during the drought. While this option is available to the City in drought conditions, the availability and reliability of such water past 2020 is unknown⁸, and therefore has not been included as long-term reliable supply for the analysis in this WSA.

2.5 Recycled Water

2.5.1 AMERICAN CANYON RECYCLED WATER

In 2010, the City completed the first phase of its Recycled Water Distribution System Project, which included a one million gallon reservoir, distribution piping, and associated improvements at the City's water treatment plant. Initially, 13 users were connected to the system and 73 acre-feet of water was delivered in 2010. Ultimately, based on the

⁸ The original term of the NCFCWCD agreement was through the end of 2015, but an amendment in 2014 authorized an extension until the end of 2020.

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT, AMERICAN CANYON, CALIFORNIA

City's 2008 Wastewater Treatment Plant Interim Facility Plan, the 2010 UWMP projected that the system could supply up to 1,000 acre-feet of water. However, utilization of this supply is dependent on connection of additional users and completion of additional distribution pipe segments. Currently, the City produces recycled water to meet demand on an as-needed basis.

The City is currently working to update their Recycled Water System Master Plan (see also Section 4.3). A draft analysis prepared as part of that plan (GHD, 2015) anticipates that 1,432 afy of recycled water demand potentially exists, and the City is currently taking steps to increase capacity of their system to meet this demand in the future. However, because the status and scope of these updates is still under review, the analysis in this WSA uses the more conservative estimate of 1,000 afy as the full system capacity, consistent with the 2010 UWMP.

The 2010 UWMP projected that 666 afy of recycled water would be delivered to 45 users by 2015, but in 2014 only 143 acre-feet was delivered to 21 users, both less than the projected goal. The City anticipates adding at least three more City facilities to the system in 2015, as well as additional private facilities that would, in total, increase recycled water use by approximately 50 afy⁹.

2.5.2 NAPA SANITATION DISTRICT RECYCLED WATER

In addition to the City's recycled water supply, Napa Sanitation District (NSD) has an existing recycled water supply pipe that extends to northern portions of the Airport Industrial Area (north of Fagan Creek). The 2010 UWMP projected that NSD would provide up to 300 acre-feet of recycled water, beginning in 2020, to the proposed Montalcino Resort, which is in the American Canyon water service area, but did not include projections for other recycled-water users in the Airport Industrial Area. Since 2010, NSD has supplied between 105 and 169 afy of recycled water to this area, which was not accounted for in the 2010 UWMP. While NSD recycled water is not available to the Project, it is included in recycled water projections for Citywide supply, so we also include it in our analysis for consistency with the 2010 UWMP.

⁹ New customers for 2015 include the new Lombard Warehouse Project, landscaping at the existing Canyon Corners Shopping Center and the Hess Collection Winery, and various City parks and landscaping medians. This number does not include the proposed Napa Logistics Project or associated irrigation along Devlin Road.

3 WATER DEMAND

The following section summarizes the anticipated potable- and recycled-water demand for the proposed Napa Logistics Project, and compares the anticipated demand of the Project to demand assumptions in the 2010 UWMP for that parcel. Section 3.3 discusses system-wide demand for the City, and provides revisions to the projections used in the 2010 UWMP to update for existing and recent conditions.

3.1 Project Demand

As described in Section 1.4, the proposed project consists of several parcels that will be developed to accommodate a variety of uses, including warehousing, industrial manufacturing, and general office space. In addition, the project will include associated landscaping areas that will require seasonal irrigation. The stormwater detention and wetland preservation areas are not expected to require supplemental water.

3.1.1 POTABLE WATER

Indoor water demand for the Project was estimated as part of a water supply analysis prepared for the City of American Canyon (WJM C&E, 2015), and is summarized in Table 2. Indoor potable demand was estimated based on the number of anticipated employees for each building, which in turn was estimated based on the expected maximum building floor area (as assumed in the EIR) and anticipated building use (warehouse, manufacturing, office)¹⁰.

Indoor water demand was further split between potable and non-potable uses, as the buildings will be dual-plumbed for recycled water (see below). Indoor potable demand was estimated to be 60 percent of total indoor demand (see WJM C&E, 2015, for supporting calculations).

In addition to water use based on employee numbers, a small amount of additional water (100,000 gallons or 0.31 afy) is expected to be used for industrial processing associated with planned manufacturing in Building 3. This process water is assumed to be potable for the purposes of this WSA, however the applicant has not ruled out the

¹⁰ Estimates of floor space per employee for various uses were based on California Plumbing Code guidelines (WJM C&E, 2015).

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

possibility of using recycled water for this purpose. The additional process water has been included in the potable water total for Building 3.

Table 2 shows the estimated potable water demand for each building in Phases I and II of the NLP project. These numbers are conservatively high—based on an estimate of 10 gallons/day/employee, whereas Green Building Code estimates per employee are closer to 7 gallons/day (WJM C&E, 2015).

Table 2 Estimated water demand for the Napa Logistics Project, Napa County, California.

Project feature	Project area (acres)	Building floor area (sq. ft.)	Potable water use (afy)	Recycled water use ² (afy)
<i>Phase I</i>				
Building 1 ³	38.21	646,000	0.87	9.79
off-site Devlin Road extension landscaping ³				1.80
<i>Phase II</i>				
Building 2(a)	9.1	100,000	3.36	7.94
Building 3 ⁴	49.62	1,000,000	33.94	37.74
Building 4	38.27	703,040	0.95	14.62
Building 5	24.4	467,600	0.63	13.08
Devlin Road dedication	3.49	--	--	1.31
Wetland area	37.22	--	--	--
Detention	6.76	--	--	--
Roads and off-site landscaping	7.33	--	--	2.20
Total	214.40	2,916,640	39.74	88.47

Notes:

¹ Adapted from WJM C&E, 2015, Table 1.

² Includes irrigation and non-potable indoor use of recycled water.

³ Building 1 non-potable water and landscape irrigation at the Devlin Road extension will be converted to recycled water use after the completion of the recycled water connection during Phase II. Non-potable water is currently supplied by pumping from an on-site well.

⁴ Anticipated manufacturing at this site is expected to use a nominal amount of industrial process water (0.31 acre-feet per year). Process water is assumed to be potable for the purposes of this WSA, though recycled water may be used.

3.1.2 RECYCLED WATER

The project is proposing to use recycled water for all irrigation needs, as well as for non-potable indoor uses such as toilets. Irrigation demand is estimated based on 2.5 acre-feet of water per acre of landscaped area per year (WJM C&E, 2015)¹¹. Indoor non-potable water demand is estimated at 40 percent of the total indoor water demand, based on calculations following the Guide to the California Green Building Standards Code (WJM C&E, 2015).

Estimated recycled water use within the project is summarized in Table 2. Details, including landscape acreage, can be found in the project Water Supply Study (WJM C&E, 2015). These numbers are intended to be used for environmental planning documentation. Actual use per building may vary based on final site plans, but total use for Phase II is expected to be consistent with (or less than) these assumptions.

In addition, to recycled water use on-site, Phase I also includes off-site irrigation of 0.52 acres of landscaped area along the Devlin Road extension (south of Kelly Road). Currently, irrigation for Phase I and the Devlin Road extension is supplied with groundwater pumped from an on-site well. As part of Phase II, the recycled pipeline will be connected to the City's recycled water system at Green Island Road, and non-potable uses for Phase I will be converted to recycled water.

3.2 Project Demand Comparison to UWMP

The demand analysis in the 2010 UWMP accounted for anticipated growth in the Napa County Airport Industrial Area when projecting future water demand within the City's service area. The following sections compare the current estimates of water demand for the project to those assumed for that parcel in the 2010 UWMP.

3.2.1 POTABLE WATER

In order to project future water demand, the 2010 UWMP used standard demand factors and a variety of growth-rate estimates for various land-use sectors. For the commercial/industrial sector, the City analyzed the acreage of vacant land zoned for those uses, and applied a water use factor of 675 gallons/day/acre (gpd/ac) to each parcel. They assumed (conservatively) that build-out would occur by 2035, and that the

¹¹ Includes 2 feet of water to meet evapotranspiration needs of California landscaping, and an additional 0.5 feet for assumed water losses.

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

increased demand was spread uniformly across the 2010-2035 period. The parcel on which the NLP project is located was included in their analysis (see Figure 3.2 in the 2010 UWMP), and thus the project's demand has been incorporated into long-term projections under an assumption of a build-out use of 675 gpd/ac (0.76 afy per acre).

Table 3 compares the estimated Project demand with the assumptions for the parcel included in the 2010 UWMP. For Phase I, the NLP is expected to use 28 afy less potable water than anticipated. For Phase II, the Project will use approximately 94 afy less potable water than projected in the 2010 UWMP. This is, in part, due to higher-than-anticipated recycled water use (see below), as well as the designation of several lots on the site (44 acres) for wetland preservation and detention that will not require municipal water supply. Implementation of the City's Zero Water Footprint Policy (see Section 5) would result in an additional 41 acre-foot reduction in potable water demand relative to the 2010 UWMP analysis.

Table 3 Estimated NLP water demand compared to assumptions within the 2010 American Canyon UWMP.

	<i>Potable Water</i>				<i>Recycled Water</i>		
	UWMP¹	Project²	Difference	ZWF offset³	UWMP⁴	Project⁵	Difference⁶
	(afy)	(afy)	(afy)	(afy)	(afy)	(afy)	(afy)
Phase I ⁷	28.91	0.87	-28.04	-1.8	9.20	11.59	2.39
Phase II	133.30	38.87	-94.43	-38.9	41.95	76.88	34.93
Total	162	40	-122	-41	51	88	37

Notes:

¹ Portion of total projected potable demand in 2010 UWMP attributed to the NLP parcel.

² From Table 1. Potable water use shown here is after completion of Phase II. For 2015, Phase I is using 0.87 acre-feet of potable supply plus 9.79 acre-feet of groundwater pumped from an on-site well.

³ Phase I is offsetting potable water use through conversion of landscape irrigation at the Devlin Road extension, with an average demand of 1.8 afy. Phase II will offset potable water use through implementation of various items from the City's "toolbox", totaling at least 38.9 afy.

⁴ UWMP assumed 2.5 acre-feet per acre of landscaping; did not assume indoor use of recycled water.

⁵ Includes irrigation and indoor non-potable use of recycled water.

⁶ Long-term demand projections in UWMP were based on assumed 1% increase in recycled water use rather than a per-acre basis; difference included here is to highlight the additional benefit of adding recycled water use for indoor non-potable water relative to the assumptions in the UWMP.

⁷ After completion of Phase II; For 2015, the difference in potable water use relative to the UWMP for Phase I is 16 afy.

3.2.2 RECYCLED WATER

The American Canyon UWMP assumes irrigation use to be 2.5 acre-feet of water per acre of landscaping, and thus the projected NLP landscape irrigation is consistent with the assumptions in the UWMP. The UWMP also assumed long-term demand for recycled water to progress toward particular landmark goals by 2015 and 2020, as outlined in the Recycled Water Implementation Plan ('RWIP'; Winzler and Kelly, 2005), with 1 percent growth after 2020 as new accounts connect to the system. Unlike potable demand, the UWMP did not project recycled water demand associated with particular parcels anticipated for development. Because recycled water use offsets demand for potable (or raw imported) water and it is in the City's best interest to maximize use of recycled water, the Project's recycled water demand is assessed relative to the recycled-water demand goals outlined in the UWMP.

By 2014, recycled water delivery was less than anticipated in the UWMP, with only 6 private customers supplied by the City and 15 City-owned facilities connected to the system, in total using less than 150 afy. Even with the goal of adding 3 City-owned and 3 private facilities to the system in 2015 (Luporini, 2015), the demand for recycled water is unlikely to meet the 666 acre-feet goal for 2015 in the UWMP.

Once completed, Phases I and II of the NLP project (including the Devlin Road extension irrigation) would add an estimated 88 acre-feet of recycled water demand (see Table 3, above), resulting in over a 50 percent increase in recycled water use relative to 2014. In addition, the completion of the connection to City's system at Green Island Road as part of the Phase II project would allow for other users in the southern portion of the Napa County Airport Industrial Area, both existing and planned, to obtain recycled water for irrigation and other non-potable demand. The City's RWIP projected an additional 5 users for the Tower Road (Devlin Road) extension phase of the project, not including the NLP parcel. These users could add another 54 acre-feet of recycled water demand for a total increase of nearly 100 percent over 2014 deliveries by the City. Thus, completion of the recycled water connection as part of Phase II of the NLP Project has broader

impacts for allowing access to recycled water supply, and would therefore be an important step in maximizing recycled water use within the City¹².

3.3 System-wide Demand

3.3.1 RECENT ACTUAL SYSTEM DEMAND

The 2010 UWMP provides a comprehensive assessment of anticipated future water demand that included projections for both potable¹³ and recycled water for 2015-2035. However, actual water usage a between 2010 and 2014 differed from what was projected in the UWMP, suggesting that demand patterns for 2015-2035 will be different as well.

Table 4 shows the actual water usage within the City's distribution area since the 2010 UWMP was completed, as well as the interpolated yearly demand based on the projections in the UWMP. From 2010 to 2013, lower-than-anticipated recycled water demand resulted in higher-than-anticipated potable water demand. The City also experienced higher-than-anticipated system losses, which contributed to higher-than-expected potable and total demand. 2014 actual usage was less than anticipated as a result of the implementation of Drought Emergency Stage 2 demand management procedures. Figure 4 highlights these recent trends.

¹² The Airport Industrial Area recycled water connection would likely be completed at some point even without Phase II of the NLP Project. However, Phase II provides the funding for this connection at an earlier point-in-time than might otherwise be achieved, expanding the system and allowing more opportunity to bring on additional users (both existing and planned) to maximize recycled water use.

¹³ Raw water used for agricultural irrigation is included as part of potable demand.

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

Table 4 Recent potable and recycled water usage for American Canyon.

	2010	2011	2012	2013	2014	2015
	(afy)	(afy)	(afy)	(afy)	(afy)	
Total potable water use¹	3,024	3,105	3,502	3,695	3,163	--
Total projected potable water demand (2010 UWMP) ²	3,024	3,058	3,093	3,128	3,162	3,197
<i>City recycled water use³</i>	73	82	130	187	143	--
<i>NSD recycled water use (northern Airport Industrial Area)⁴</i>	136	105	140	139	169	--
Total recycled water use	209	187	270	326	312	--
Total projected recycled water demand (2010 UWMP) ⁵	73	192	310	429	547	666
Total water usage (actual)	3,233	3,292	3,772	4,021	3,475	--
Total projected water demand (2010 UWMP)	3,097	3,250	3,403	3,557	3,710	3,863

Notes:

¹ Actual water usage from Napa County Flood Control and Water Conservation District SWP delivery accounting tables (provided by the City) plus agricultural raw water.

² Linear interpolation of 2010 usage and UWMP projected potable water demand for 2015.

³ Actual recycled water usage, from American Canyon Annual Recycled Water Usage Reports.

⁴ Past recycled-water deliveries to the northern Airport Industrial Area (Jason Holley, American Canyon Public Works Director; July 2015).

⁵ UWMP projections did not include NSD deliveries to the northern Airport Industrial Area.

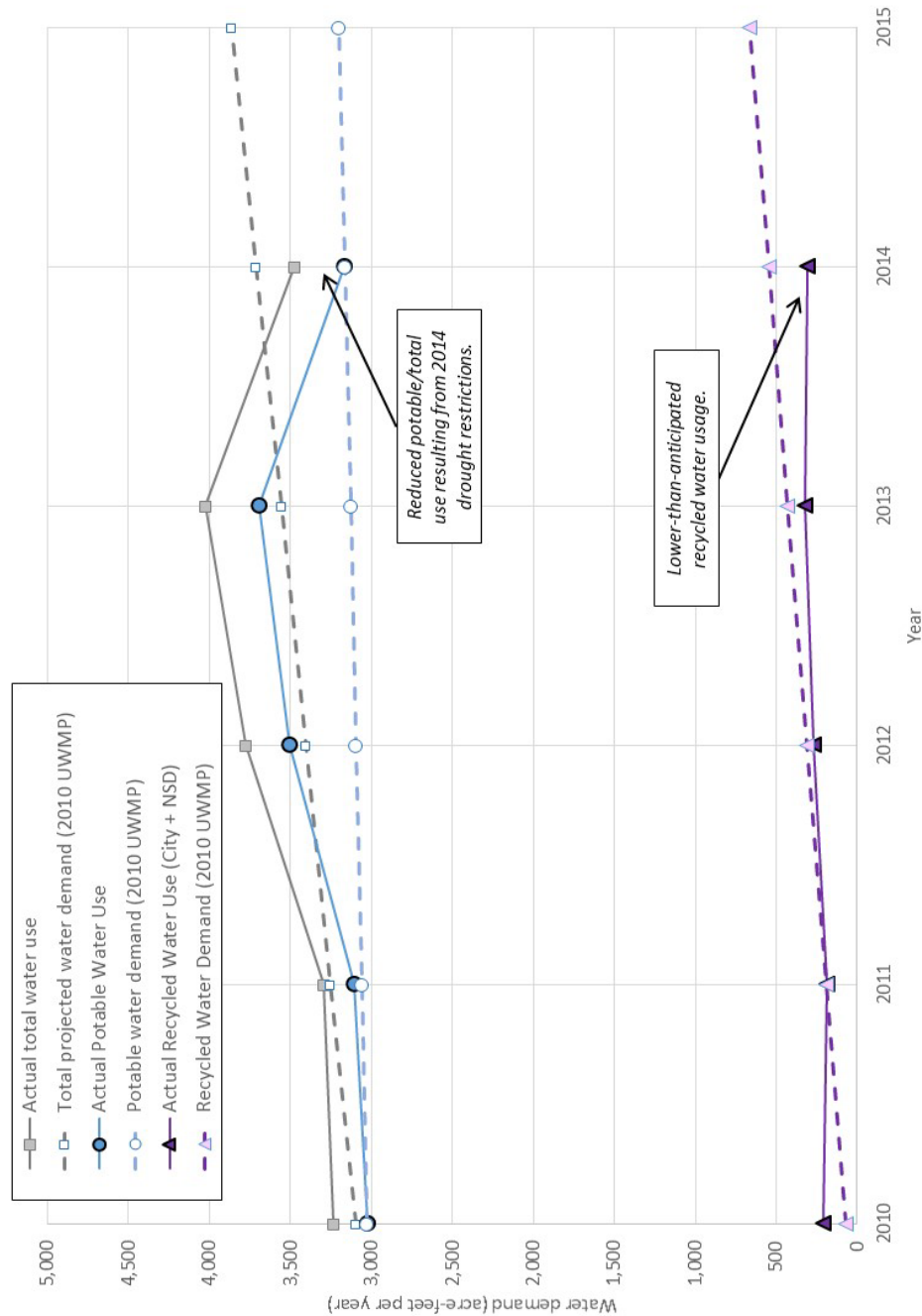


Figure 4 Recent total, potable, and recycled water demand for the City of American Canyon, Napa County, California.

The graph shows the recycled water use has been less than anticipated in the 2010 UWMP, and (prior to drought restrictions in 2014), potable water use has been higher-than-expected.

3.3.2 ADJUSTMENTS TO PROJECTED SYSTEM DEMAND

Projected Demand (2010 UWMP)

The 2010 UWMP projected future demand on a parcel-by-parcel basis relative to expected growth under the City's general plan. The analysis assumed that recycled water would be available to meet a portion of the total demand, with the remainder supplied by potable water. Table 5 shows the water demand as presented in the 2010 UWMP. It is important to note that the UWMP had included 300 afy of recycled water supply from NSD for the proposed golf course at the Montalcino Resort. However, that portion of the water demand would have no effect on the City's potable supply and thus has been excluded from Table 5 and from the subsequent adjustments to system-wide demand.

Table 5 **Projected potable, recycled, and total water demand for American Canyon through 2035, as presented in the 2010 UWMP.**

	2015	2020	2025	2030	2035
	(afy)	(afy)	(afy)	(afy)	(afy)
<i>Projected potable water demand (UWMP)¹</i>	2,974	3,423	3,873	4,323	4,772
<i>Projected potable system losses (UWMP)²</i>	223	257	290	324	358
<i>Recycled water demand (UWMP)³</i>	666	666	714	765	818
Total water demand (UWMP)⁴	3,863	4,346	4,877	5,412	5,948

Notes:

¹ From 2010 American Canyon UWMP, Tables 3.14 to 3.16, excluding recycled-water demand; includes SWP raw water for agricultural irrigation; excludes system losses.

² Unaccounted-for system losses assumed to be 7.5% of potable demand, from UWMP Table 3.18.

³ From 2010 American Canyon UWMP, Tables 3.14 to 3.16, recycled water only; excludes demand projected for the Montalcino Resort; the UWMP did not include other NSD deliveries to the northern Airport Industrial Area.

⁴ Sum of potable demand, system losses, and recycled water demand; consistent with totals shown in Table 3.19 in the 2010 UWMP (less Montalcino Resort recycled demand).

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

Revised Recycled Water Demand

As discussed in Section 3.3.1, recycled water delivery for 2010 to 2014 was less than anticipated in the 2010 UWMP, and the demand for 2015 is unlikely to reach the goal of 666 afy. In consideration of these recent conditions, Table 6 provides adjusted recycled-water demand projections for the City. For 2015 and 2020, recycled water demand (for City supply) is lower than assumed in the UWMP. The City now expects full expansion of the recycled water system by 2025 in order to maximize the use of available supply, resulting in higher-than-anticipated recycled water usage for 2025-2035¹⁴.

The City is currently in the process of updating their Recycled Water System Master Plan. The preliminary results of this analysis indicates potential long-term demand (for the City's system) to be as high as 1,432 afy. However, as discussed in Section 2.5.1, the analysis in this WSA uses the more conservative 1,000-afy estimate of long-term system capacity.

Recycled water demand for the northern Airport Industrial Area will continue to be supplied by NSD, and will offset potable demand that would otherwise be supplied by the City. Revised projections for NSD recycled water are summarized in Table 6.

Table 6 Revised system-wide recycled water projections, City of American Canyon, 2015-2035.

	2015	2020	2025	2030	2035
	(afy)	(afy)	(afy)	(afy)	(afy)
<i>Revised recycled water projections (American Canyon)</i> ¹	200	600	1,000	1,000	1,000
<i>Revised recycled water projections (NSD)</i> ²	170	200	225	225	225
Total projected recycled water demand within the American Canyon service area	370	800	1,225	1,225	1,225

Notes:

¹ From the City's recycled water distribution system.

² Projected deliveries from NSD to the northern Airport Industrial Area. Does not include demand for the Montalcino Resort, as that amount will not affect City-wide demand.

¹⁴ Personal communication with Jason Holley, American Canyon Public Works Director, July 2015.

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

As shown in Table 7, the revised total recycled water projections result in lower recycled-water demand for 2015 and higher-than-expected demand for recycled water in 2020-2035 than was assumed in the UWMP.

Table 7 **Comparison of revised system-wide recycled water projections to projections in the 2010 UWMP.**

	2015	2020	2025	2030	2035
	(afy)	(afy)	(afy)	(afy)	(afy)
<i>Recycled water demand from 2010 UWMP¹</i>	666	666	714	765	818
<i>Revised recycled water projections²</i>	370	800	1,225	1,225	1,225
Difference between UWMP and revised projections³	296	-134	-511	-460	-407

Notes:

¹ From Table 5; does not include projections for the Montacino Resort.

² From Table 6.

³ UWMP demand minus revised projections. A positive difference (2015) will need to be met by potable supply; a negative difference (2020-2035) will offset potable demand. See also Table 8.

Revised Potable Water Demand

Because there is little, if any, demand solely for recycled water, if it is not available to the degree expected in the UWMP potable water is assumed to be used to replace that portion of total demand. For the purposes of the analysis in this WSA, we assume that total projected demand is consistent with the UWMP (with the exception of unbilled water losses, as discussed below), but with a different proportion of that total supplied by potable water. Because the expansion of the City's recycled water system has been somewhat slower than expected in the 2010 UWMP, less recycled water is available now and in the near future to offset potable demand. Therefore, we project higher potable demand, relative to the UWMP, for 2015. After completion of the recycled water distribution system by 2025, demand is projected to be lower than in the UWMP, due to increased recycled-water offsets during that period¹⁵.

Table 8 shows the projected potable water demands based on the revised recycled water demand projections. Adjusted future potable demand was calculated by taking

¹⁵ Revised potable system-wide demand is also projected to be less for 2020, due to the inclusion of northern Airport Industrial Area demand for NSD recycled water, which was not included in the 2010 UWMP.

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

2010 UWMP potable demand (not including system losses, from Table 5), and adding the difference between UWMP recycled water projections and revised recycled water projections (from Table 7).

For example, 2015 UWMP recycled demand was projected at 666 afy (Table 5), whereas revised projections are 370 afy (Table 6). The difference between these two numbers (296 afy; Table 7) is assumed to be supplied by potable water, and thus the revised potable demand is projected to be 3,270 afy (which is 296 afy higher than the 2,974 afy that was projected in the UWMP; Table 8)¹⁶.

As a second example, in Year 2035, the UWMP potable water demand was projected at 4,772 afy (Table 5). The difference between UWMP recycled water projections (818 afy) and revised recycled water projections (1,225 afy) is -407 afy (Table 7). Thus, the revised potable demand for 2035 is 4,365 afy (which is 407 afy less than the UWMP).

Table 8 Revised system-wide potable water projections, 2015-2035.

	2015	2020	2025	2030	2035
	(afy)	(afy)	(afy)	(afy)	(afy)
Potable water demand from 2010 UWMP ¹	2,974	3,423	3,873	4,323	4,772
Recycled water demand adjustment ²	296	-134	-511	-460	-407
Revised potable water projections	3,270	3,289	3,362	3,863	4,365

Notes:

¹ From Table 5; does not include system losses.

² Difference between UWMP and revised recycled water demand; from Table 7.

Unbilled Water Losses

The UWMP assumed that unbilled water losses¹⁷ would be 7.5 percent for each year between 2015-2035. This is consistent with standards adopted by the California Urban Water Conservation Council (CUWCC), which provides that systems that experience greater than 10-percent losses annually undergo a water audit. In 2014 and 2015, water delivery and water-use records indicate that system losses are currently between 13 and

¹⁶ It is important to note that the system-wide projections in Table 8 are for a "normal year" scenario. Actual water usage for 2015 is likely to be considerably different than the demand presented here due to the Drought Stage 2 Emergency provisions in effect during 2015.

¹⁷ Referred to as "Unaccounted-for System Losses" in the UWMP.

20 percent. The City is currently undertaking an aggressive response to the situation by replacing leaky services and water mains to reduce system loss. The City conservatively assumes that it could take up to ten years to reduce losses to 7.5 percent, though it will likely take less time. The revised analysis in this WSA assumes conservatively high system losses for 2015 and 2020 (20 and 15 percent, respectively), with more typical losses of 7.5 percent for 2025-2035 (see Table 9, below).

3.3.3 SYSTEM-WIDE DEMAND SUMMARY

The revised demand projections described above use the total water demand calculated in the UWMP as the underlying basis, but allocate that demand differently based on updated expectations for the recycled water system and on revised assumptions for potable water losses. Table 9 shows the revised system-wide demand for potable and recycled water, as well as revised numbers for system losses (as described above). Figure 5 compares the revised projections to the demand anticipated in the UWMP. In general, the City expects potable water demand to be higher than expected in the 2010 UWMP for 2015 and 2025, and lower-than-expected by 2025 once system losses are reduced and the City's recycled-water system reaches full capacity.

It is noteworthy that revised projections for 2015 (Table 9) are slightly higher than reported usage for 2013 (for both potable and total demand, from Table 4), and that the revised projections do not consider the effect of the City's on-going drought restrictions¹⁸. As such, the revised projections appear to be a more conservative estimate of potable demand moving forward than do the projections in the UWMP. Due to expansion of the recycled-water system, and improvements to system losses, the City expects that potable water demand will be similar to or less than existing usage until at least 2025 (Figure 4).

¹⁸ Projections for 2015 are for a "normal-year" scenario, thus would be expected to be more similar to 2013 demand than 2014 when drought restrictions were in place.

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

Table 9 Revised projections of total, potable, and recycled water demand for
American Canyon, 2015 - 2035.

	2015	2020	2025	2030	2035
	(afy)	(afy)	(afy)	(afy)	(afy)
Revised potable water demand projections ¹	3,270	3,289	3,362	3,863	4,365
Revised system losses projections ²	654	493	252	290	327
Adjusted total potable demand projections	3,924	3,782	3,614	4,153	4,692
Adjusted long-term recycled-water demand projections³	370	800	1,225	1,225	1,225
Adjusted long-term total demand projections⁴	4,294	4,582	4,839	5,378	5,917

Notes:

¹ From Table 8.

² Assumed losses of 20% of potable demand for 2015, 15% of potable demand for 2020, and 7.5% of potable demand for 2025-2035 (personnal communication with Jason Holley, American Canyon Public Works Director, June 2015).

³ From Table 6.

⁴ Adjusted potable demand (including system losses) plus adjusted recycled-water demand. Because of differences in the assumed percentage of system losses (for 2015 and 2020), and the potable demand from which loss percentages are calculated (2025-2035), the adjusted long-term total demand is different from the total demand presented in the 2010 UWMP (see Table 5). When excluding system losses, the revised total demand is consistent with the projections in the 2010 UWMP.

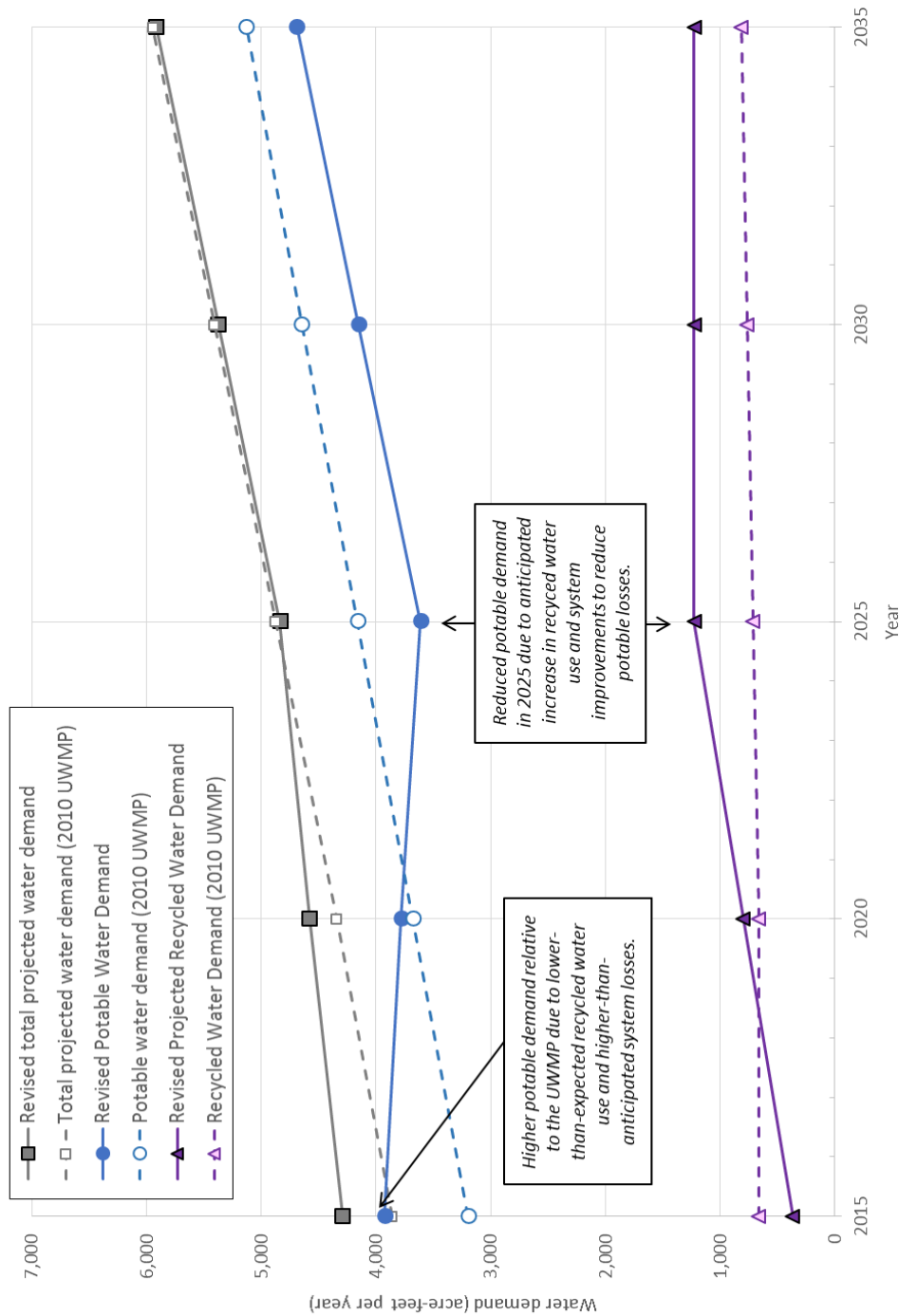


Figure 5 Comparison of projected total, potable, and recycled water demand for the City of American Canyon, Napa County, California.

The graph shows demand as projected in the 2010 UWMP compared to revised demand projections based on recent and expected trends (Jason Holley, American Canyon Public Works personal communication, June 2015). See text for additional discussion.

4 SUPPLY AND DEMAND COMPARISON

This section compares future City-wide water demand, which includes both phases of the NLP project, to anticipated available supply under 'normal year,' 'single dry year,' and 'multiple dry year' scenarios. The planning scenarios used in the 2010 UWMP have been adjusted for use in this report to account for the current on-going drought conditions as discussed below.

The analysis herein addresses potable and recycled water separately, as recycled water supply is considered reliable (and available at 100 percent of capacity) under all year-types. Reliability of potable water varies by year type as a percentage of contracted amount, as shown in Table 10 and further described below.

Table 10 Supply reliability for various American Canyon water sources. Assumed percent of contracted amount for various year-type scenarios.

Source	Contracted or Available Volume	Year Type				
		Normal Year	Single Dry Year	Dry year 1	Dry year 2	Dry year 3
SWP (Table A allotment) ¹	5,200	58%	5%	22%	22%	22%
Vallejo Permit Water ²	500	100%	85%	85%	80%	75%
Vallejo Treated Water ²	Varies ³	100%	85%	85%	80%	75%
Vallejo Emergency Water ²	500	0%	100%	100%	100%	100%
Groundwater ⁴	n/a	--	--	--	--	--
American Canyon Recycled Water	n/a ⁵	100%	100%	100%	100%	100%
NSD Recycled Water	Varies ⁶	100%	100%	100%	100%	100%

Notes:

¹ Percentages vary from those used in the 2010 UWMP to account for constrained conditions since 2013 during the current drought.

² Percentages from 2010 UWMP.

³ Contracted amount is 2,075 in 2015, 2,641 in 2020, and 3,207 in 2025-2035.

⁴ Groundwater is not a source for City-wide supply.

⁵ Recycled water is produced to meet demand; ultimately, maximum production capacity of City's

⁶ Recycled water supply for the northern portion of the Airport Industrial Area; NSD expects to supply 200 afy in 2015, and 250 afy for 2020-2035.

4.1 Potable Water

Table 11 summarizes available potable water supply under 'normal year', 'single dry year', and 'multiple dry year' scenarios. As outlined in Section 2, the City's potable water supply relies exclusively on imported water, both from the SWP and through the City of Vallejo. A percentage of the full contracted amount is assumed for each source type under each scenario (Table 10, above). These percentages are based on guidance by DWR, analysis in the City's UWMP and the Vallejo UWMP, and adjustments based on actual SWP deliveries during the recent drought. Resulting supply volumes for each source under the various scenarios through 2035 are shown in Table 11. The supply and demand for potable water for each of the year-types is discussed below¹⁹.

4.1.1 NORMAL YEAR

In a 'normal year', the City's 2010 UWMP assumes 'Table A' SWP deliveries would be 60 percent of the total contracted amount. However, the most recent SWP Reliability Report (for 2013; CA DWR, 2014), estimates normal-year delivery to be only 58 percent, and this lower number is used for the analysis herein. Treated water from Vallejo water and raw Vallejo Permit water are assumed to be 100 percent available in normal years, consistent with the 2010 UWMP.

The UWMP concluded that future supply is available to meet anticipated demand in normal years through build-out in 2035, as does the analysis in this WSA (Table 12). Excess supply in normal years ranges from a low of 1,667 afy in 2015 to a high of 3,109 afy in 2025. Because the proposed Project would use less water than outlined in the UWMP, even more water than anticipated would be available City-wide under the NLP project scenario.

4.1.2 SINGLE DRY YEAR

Under the "single-dry-year" scenario, the 2010 UWMP assumed SWP Table A deliveries to be curtailed to 22 percent of the contracted amount. Recent drought conditions, however, suggest that actual deliveries during very dry years is likely to be significantly less than assumed in the UWMP. In 2014, Table A deliveries were reduced to 5 percent of

¹⁹ The analysis does not include adjustments for reduced demand of the NLP project relative to the assumptions in the UWMP for that parcel. As discussed in 3.2, the NLP project (Phase I and II combined) are expected to use 122 afy less than anticipated for those parcels in the UWMP, and will fund ZWF demand offsets of at least 41 afy. Other recently completed projects or projects currently in the planning process may also affect projected demand, but have not been included in this analysis.

the contracted amount. The analysis in this WSA uses this revised amount to forecast single-dry-year deliveries for Table A water (see Table 10 and Table 11).

As discussed in Section 2.2, all water from Vallejo is considered a more reliable source than the City's SWP supply. The 2010 UWMP assumes that both raw Vallejo Permit Water and Treated Vallejo Water are available at 85 percent of the contracted amount during single dry years. In addition, the full allotment of raw Vallejo Emergency Water (500 acre-feet) would be available under dry-year conditions. The analysis herein uses these same assumptions.

The 2010 UWMP projects sufficient single-dry-year supply to meet potable demand until the year 2030, but a deficiency in 2035. Our revised supply/demand analysis projects dry-year deficiencies in 2015 to 2020, and 2030 to 2035 (Table 12) relative to projected normal-year demand. The greatest shortfall would occur in 2015 (-975 afy), prior to the full utilization of the City's recycled water system. The City has several options available to resolve dry-year supply deficiencies, as described in Section 4.2.

4.1.3 MULTIPLE DRY YEARS

The multiple-dry-year scenario, as described in the UWMP consists of three consecutive years of reduced water deliveries, though none are reduced to the same degree as the single-dry-year scenario²⁰. The UWMP assumed that SWP Table A water would be reduced to 38 percent of the contracted amount for each of three years. However, over the past three consecutive dry years (2013-2015), the City has received significantly less water than anticipated in the 2010 UWMP, with actual deliveries of 30-, 5-, and 25-percent in 2013, 2014, and 2015 respectively. For the purposes of the analysis in this report, it is assumed that future multi-year droughts would result in similar reductions, and the three-year average for 2013-2015 (22% for each year) is used within the three-year planning scenario (see Table 10 and Table 11)²¹.

Raw Permit water and Treated water from Vallejo are assumed to be available at 85, 80, and 75 percent of the contracted amount for years 1, 2, and 3 of the multi-year drought respectively, following the assumptions in the 2010 UWMP. Vallejo Emergency water is

²⁰ The reference period used for the multi-dry-year scenario in the UWMP is the drought from 1990-1992. From a planning perspective, the UWMP assumed that a three-year drought is unlikely to include the "single dry-year" scenario.

²¹ The three-year average is used to allow the same reduction percentage to be applied to each year of the planning scenario, similar to the assumption in the 2010 UWMP.

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

assumed to be available at the full contracted amount (500 acre-feet) for each of the three years of a multi-year drought, consistent with the 2010 UWMP.

The 2010 UWMP projects that water supply will exceed demand during a three-year drought through the full 2035 planning period. The revised analysis, however, predicts supply shortages (relative to normal-year demand) in each year of a three-year drought for the 2015 planning period, and in Years 2 and 3 of a drought for the 2035 planning period (Table 12). As with the single-dry-year scenario, the City has several options to address these shortfalls, as discussed in Section 4.2.

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

Table 11 Projected water supply for American Canyon for various year types.
See Table 10 for percentages used for various year types. All values in acre-feet per year.

Source	Contracted or Available Volume	2015				2020				2025				2030				2035			
		Normal Year	Single Dry Year	Dry Year 1	Dry Year 2	Dry Year 3	Normal Year	Single Dry Year	Dry Year 1	Dry Year 2	Dry Year 3	Normal Year	Single Dry Year	Dry Year 1	Dry Year 2	Dry Year 3	Normal Year	Single Dry Year	Dry Year 1	Dry Year 2	Dry Year 3
SWP (Table A allotment)	5,200	3,016	260	1,144	1,144	1,144	3,016	260	1,144	1,144	1,144	3,016	260	1,144	1,144	1,144	3,016	260	1,144	1,144	1,144
Vallejo Permit Water	500	500	425	400	375	375	500	425	400	375	375	500	425	400	375	375	500	425	400	375	375
Vallejo Treated Water	Varies ¹	2,075	1,764	1,764	1,660	1,556	2,641	2,245	2,245	2,113	1,981	3,207	2,726	2,726	2,566	2,405	3,207	2,726	2,726	2,566	2,405
Vallejo Emergency Water	500	0	500	500	500	500	0	500	500	500	500	0	500	500	500	500	0	500	500	500	500
Ground-water ²	n/a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Potable		5,591	2,949	3,833	3,704	3,575	6,157	3,430	4,314	4,157	4,000	6,723	3,911	4,795	4,610	4,424	6,723	3,911	4,795	4,610	4,424
American Canyon Recycled Water	n/a ³	200	200	200	200	200	600	600	600	600	600	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
NSD Recycled Water	Varies ⁴	170	170	170	170	170	200	200	200	200	200	225	225	225	225	225	225	225	225	225	225
Total Recycled		370	370	370	370	370	800	800	800	800	800	1,225	1,225	1,225	1,225	1,225	1,225	1,225	1,225	1,225	1,225
Total Supply		5,961	3,319	4,203	4,074	3,945	6,957	4,230	5,114	4,957	4,800	7,948	5,136	6,020	5,835	5,649	7,948	5,136	6,020	5,835	5,649

Notes:
¹ Contracted amount is 2,075 in 2015, 2,641 in 2020, and 3,207 in 2025-2035.
² The NUP on-site well would temporarily be used for non-potable Phase I water use and offset irrigation at Devilin Road landscaping until recycled water connection is established, but is not a source for City-wide supply.
³ Recycled water is produced to meet demand; ultimately, maximum production capacity of City's recycled water system is expected to be 1,000 afy.
⁴ Recycled water supply for the northern portion of the Airport Industrial Area. NSD expects to supply 200 afy in 2015, and 250 afy for 2020-2035.

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

Table 12 Comparison of potable and recycled water supply and demand under various year-type scenarios.
All values in acre-feet per year. See Table 15 for resolution of potable supply-demand deficiencies.

Source	2015						2020						2025						2030						2035					
	Normal Year	Single Dry Year	Dry year 1	Dry year 2	Dry year 3	(afy)	Normal Year	Single Dry Year	Dry year 1	Dry year 2	Dry year 3	(afy)	Normal Year	Single Dry Year	Dry year 1	Dry year 2	Dry year 3	(afy)	Normal Year	Single Dry Year	Dry year 1	Dry year 2	Dry year 3	(afy)	Normal Year	Single Dry Year	Dry year 1	Dry year 2	Dry year 3	(afy)
Total potable supply ¹	5,591	2,949	3,833	3,704	3,575	(afy)	6,157	3,430	4,314	4,157	4,000	(afy)	6,723	3,911	4,795	4,610	4,424	(afy)	6,723	3,911	4,795	4,610	4,424	(afy)	6,723	3,911	4,795	4,610	4,424	(afy)
Potable demand ²	3,924	3,924	3,924	3,924	3,924	(afy)	3,782	3,782	3,782	3,782	3,782	(afy)	3,614	3,614	3,614	3,614	3,614	(afy)	4,153	4,153	4,153	4,153	4,153	(afy)	4,692	4,692	4,692	4,692	4,692	(afy)
Potable supply minus demand	1,667	-975	-91	-220	-349	(afy)	2,375	-352	532	375	218	(afy)	3,109	297	1,181	996	810	(afy)	2,570	-242	642	457	271	(afy)	2,031	-781	103	-82	-268	(afy)
Recycled water supply ³	370	370	370	370	370	(afy)	800	800	800	800	800	(afy)	1,225	1,225	1,225	1,225	1,225	(afy)	1,225	1,225	1,225	1,225	1,225	(afy)	1,225	1,225	1,225	1,225	1,225	(afy)
Recycled water demand ⁴	370	370	370	370	370	(afy)	800	800	800	800	800	(afy)	1,225	1,225	1,225	1,225	1,225	(afy)	1,225	1,225	1,225	1,225	1,225	(afy)	1,225	1,225	1,225	1,225	1,225	(afy)
Recycled supply minus demand	0	0	0	0	0	(afy)	0	0	0	0	0	(afy)	0	0	0	0	0	(afy)	0	0	0	0	0	(afy)	0	0	0	0	0	(afy)

Notes:

- ¹ From Table 11.
- ² Projected potable normal-year demand, from Table 9.
- ³ From Table 5; includes City and Airport Industrial Area NSD supply.
- ⁴ From Table 4; includes City and Airport Industrial Area NSD recycled-water demand.

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

4.2 Potable Water Deficiency Resolution

The above analysis compares potable water supply and normal-year demand, and projects supply shortages in several of the 'dry-year' and 'multi-dry-year' planning scenarios. This section describes a series of options available to the City to eliminate those shortfalls in order to provide reliable supply. Estimated SWP carryover water (see Section 4.2.1) would be sufficient to eliminate dry-year supply shortfalls, and could also be used in combination with drought demand reductions to further improve supply reliability. Implementation of the NLP project (not accounted for in this analysis) would further improve supply reliability because the project would use less water than estimated in the demand projections for that parcel.

4.2.1 SWP CARRYOVER WATER

If the City does not use its entire allotment of Table A water in a given year, the remaining water will carry-over to the following year, assuming there is adequate storage in SWP reservoirs to contain the excess supply²². Over the past six years, the City has stored between 379 and 2,509 acre-feet of carry-over water in a given year (Table 13), which has helped to meet demand during the recent drought. Because of the variability of carryover supply and the periodic "re-set" of the accounting when reservoirs are full, it is not considered a consistent yearly supply for planning purposes, but it does allow the City extra flexibility during droughts. As such, we have incorporated carry-over water into the analysis in this WSA (see Table 15, below).

Table 13 Recent SWP carryover water supply for the City of American Canyon.
Values from Napa County Flood Control and Water Conservation District
SWP delivery accounting tables (provided by the City).

	2010	2011	2012	2013	2014	2015	Mean
Table A deliveries (% of total contract amount)	50%	80%	65%	35%	5%	25%	43%
Available carryover water (remaining from previous year, in afy) ¹	798	479	2,113	2,509	2,019	379	1,383

Notes:

¹ From Napa County Flood Control and Water Conservation District SWP delivery accounting tables (provided by

² For 2015, includes only carryover associated with the City's Table A delivery, not carryover water associated with the open market purchase made in 2014.

²² In years when SWP reservoirs spill, the carry-over water is released, effectively re-setting carryover accounting to zero. Typically, however, ample storage is available in dry years.

We assume that 1,380 acre-feet of carryover water, the average over the last six years (Table 13), would be available at the beginning of a dry year and the first year of a multi-year drought. Projected excess normal-year supply ranges from 1,571 to 3,109 acre-feet for 2015-2035 (see Table 12), suggesting that the 1,380 acre-feet is a reasonable and somewhat conservative estimate for planning purposes²³. In the second and third year of a multi-year drought, we assume that the remaining carry-over supply (assuming there is any) would continue to carry over to subsequent years to supplement supplies.

For example, in Year 1 of the multi-dry year scenario for 2015, 1,380 acre-feet would be available to meet the supply deficit of -187 acre-feet (from Table 12). The difference (1,193 af) would be available in Year 2 of that drought. That carryover water would satisfy the year 2 supply deficit (-316 af) with the balance (887 af) carrying over to year three. Similar calculations for other multi-dry-years (whether or not deficits were identified) are included in Table 15 at the end of this section.

Under the above assumptions, the City would be able to meet projected supply deficiencies under all dry- and multi-dry-year scenarios within the planning period (2015-2035) through the use of available carry-over water.

4.2.2 ADVANCED TABLE A PROGRAM

A recent court settlement (Area of Origin Settlement²⁴, 2014), clarifies another potential mechanism for the Napa County FCWCD, the Solano County Water Agency, and Yuba City (along with subcontractors to those agencies, which includes American Canyon) to obtain water during dry periods. The Advanced Table A Program allows these agencies to 'borrow' against future SWP deliveries during times when annual deliveries are not sufficient to meet demand. The agreement requires that all Table A and Table A Carryover water be used prior to utilizing the Advanced Table A Program, but under those circumstances the City could request an advance of up to 949 af from future years' Table A allotments.

The projections in Table 15 do not rely on the use of the Advanced Table A Program water to meet dry-year demand, as estimated Table A Carryover is enough to cover supply deficiencies for all scenarios. However, this Program provides an important tool available

²³ By definition, a single-dry-year would follow a normal or wet year, as would the first year of a three-year drought.

²⁴ Superior Court of the State of California, County of Sacramento, Case No. 34-2008-000016338-CU BC GDS.

to the City should unforeseen circumstances result in significantly lower-than-expected carryover.

4.2.3 DROUGHT-YEAR DEMAND REDUCTIONS

It is important to note that the demand projections in the 2010 UWMP (as well as for the analysis in this WSA) were not explicitly adjusted for voluntary or mandatory water-use reduction measures that may be implemented in response to drought conditions²⁵. The City has a Water Shortage Contingency Plan that outlines four stages of water demand reduction measures that could be utilized when water supply is constrained due to environmental or other conditions. The City projects demand reductions of 10/20/30/50 percent corresponding to each of the tiers, beginning with voluntary actions at Tier 1, and moving to increasingly restrictive mandatory measures for Tiers 2-4 (see Table 5.14 in the 2010 UWMP for a description of the reduction measures).

On February 1, 2014, in response to on-going statewide drought conditions, the City declared a Stage 1 drought emergency that called for a voluntary reduction from residential and commercial customers compared to the previous year. On August 1, 2014, the City declared a Stage 2 drought emergency, enacting mandatory water-use restrictions as outlined in their Water Conservation Plan (Ordinance 2009-03). Stage 2 restrictions have continued into 2015. As a result of these and other measures, potable water demand in 2014 was reduced by approximately 13 percent (478 acre-feet) below 2013 use after year-to-year increases averaging 7 percent between 2010 and 2013 (see Table 4 and Figure 4).

Because estimated carryover water was sufficient to satisfy projected shortages, the supply and demand analysis in Table 15 does not account for drought-year demand reduction. However, the City may choose to use these measures to provide additional flexibility during droughts. Assuming drought reductions of 13 percent, similar to what was achieved in 2014, the City could be expected to reduce demand in future years ranging between 470 af in 2025 and 610 af in 2035 (Table 14). While these volumes would not solely eliminate projected dry-year shortages, these measures could be used in conjunction with the above measures to provide additional buffer, as needed, if other supplies are unexpectedly curtailed. Stronger restrictions (level 3 or 4), could be used to achieve greater reductions if necessary, but are not likely to be needed.

²⁵ For the purposes of the UWMP and this WSA, demand is assumed to be the same in normal- and dry-year scenarios for a given planning period.

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

Table 14 **Projected drought-year demand savings.** Estimated drought conservation volume (potable demand reduction) that could be used during future droughts to help the City manage supply shortages. Volumes based on 13% savings achieved between 2013 and 2014 (see Table 4).

	2015	2020	2025	2030	2035
	(afy)	(afy)	(afy)	(afy)	(afy)
Projected normal-year potable demand ¹	3,924	3,782	3,614	4,153	4,692
Estimated drought conservation volume ²	510	492	470	540	610

Notes:

¹ From Table 4, including system losses.

² 13% of potable demand.

4.2.4 OPEN MARKET PURCHASES

As discussed in Section 2.4 the City has the option to purchase additional water from a variety of other sources on an as-needed and as-available basis. These potential purchases were not considered as a reliable long-term supply for the purposes of this WSA, though the City could chose to purchase additional supply in dry years when normal supplies are constrained. In fact, the City chose to utilize this option in 2014, and purchased approximately 1,800 af of additional supply through the Dry Year Transfer and Yuba Accord Programs. As with the above options, Open Market Purchases can provide additional operational flexibility for the City during dry periods when other supplies are reduced.

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4.3 Recycled Water

As discussed in Section 2.5, the City's recycled water system has a supply capacity of up to 1,000 acre-feet per year (once the system is completed), and NSD has agreed to provide up to 225 acre-feet to supply the northern portion of the Airport Industrial Area (which is located within the City's water service area). Practically, however, the City produces recycled water to meet demand, as shown in Table 12 (above). Because recycled water is derived from wastewater that is 1) less susceptible to fluctuation due to climatic conditions, and 2) available in excess of the capacity of the recycled water system, recycled water is assumed to be 100 percent available during single- and multi-year-drought scenarios.

Table 12 presents recycled water supply versus demand for the 2015-2035 planning period under various year-type scenarios. Because recycled water use offsets water that would otherwise be delivered from limited potable or imported-water supply, it is in the City's best interest to maximize recycled water use by way of increasing the number of recycled water users tied in to the system.

The projections for recycled water use in the 2010 UWMP were, in effect, operational goals to maximize recycled water use. The UWMP projected 666 acre-feet of recycled water use by 2015 and 2020 (excluding the 300 acre-feet demand for the Montalcingo Resort), and 1 percent growth per year thereafter. Recent recycled water use has been much lower than anticipated for 2015 in the UWMP, and as such, the analysis in this WSA has adjusted near-term demand accordingly (see Table 6)²⁶. The City expects a significant expansion in the recycled water delivery system by 2025, allowing full use of the system by that time (which would include the NLP project). The NLP project would, in part, facilitate this expansion by providing a recycled water connection to expand the delivery system to the Project and the rest of the southern portion of the Airport Industrial Area. Under this revised scenario, supply is available to meet demand under all planning scenarios.

Moreover, as discussed in Section 2.5.1, the City is currently undertaking a review of its projected recycled water demand. Future demand will come from development that occurs under build-out of the General Plan as well as conversion of existing potable water customers to recycled water as shown in Table 16. These estimates (up to 1,414 afy) are greater than the system capacity anticipated in the 2010 UWMP and the City is currently

²⁶ Recycled water demand for NSD-supplied water has also been updated—170 afy in 2015, 200 afy in 2020, and 225 afy for 2025-2035.

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT, AMERICAN CANYON, CALIFORNIA

taking steps to increase system capacity to meet this demand. However, in order to provide a conservatively high assessment of potential potable water demand, however, this WSA uses the lower City recycled-water system capacity of 1000 afy, as shown in Table 7.

Table 16 Summary of potential recycled water demand, by sector.

Utility land-use classification	Potable offset demand ² (afy)	Buildout demand ³ (afy)
Single-family residential ⁴	--	19.0
Multi-family residential	26.9	26.9
Commercial	31.9	35.4
Industrial	28.8	194.1
Institutional/Governmental ⁵	45.2	118.6
Landscape	9.6	69.0
Open Space	--	--
Watson Ranch	--	253.2
Recreation	--	524.0
Agricultural	--	173.2
Total	142.4	1,413.5

Notes:

¹ Adapted from GHD, 2015, Table 9. Projected demand used in the WSA analysis (Table 6) are lower than the numbers shown here in order to provide a conservative estimate of future demand.

² Estimated potable water offsets for existing and future potable water customers who would wholly or partially convert to recycled water at build-out.

³ Total recycled water demand (including existing and offset demand) at buildout of the General Plan.

⁴ Two parcels that are classified as "Single Family" will have dedicated landscape irrigation meters for recycled water at build-out.

⁵ Buildout demand for Institutional/Governmental assumes the American Canyon High School will halve existing demand by fixing suspected leaks in the irrigation system.

4.4 Summary

In summary, the analysis in this WSA shows that the City's water supply is sufficient to meet projected demand, including the NLP project's demand, in all years and under all normal-, dry, and multi-dry-year scenarios. The analysis shows that demand will exceed supply during some dry years and in portions of some multi-year droughts (Table 12), but the City will still be able to meet demand through the use of carryover SWP water, or through some combination of carryover SWP water, Advanced Table A Water, demand reductions, and/or additional purchases on the open market (Table 15). The analysis in this WSA accounts for more severe dry-year reductions in water supply than was assumed

WATER SUPPLY ASSESSMENT FOR PHASE II OF THE NAPA LOGISTICS PARK PROJECT,
AMERICAN CANYON, CALIFORNIA

in the 2010 UWMP, based on extremely low deliveries over the past three years. It also accounts for changes in potable water demand due to updated projections of the proportion of total water demand that could be met through recycled-water use.

In addition, recycled water supply in the City is available to meet existing and projected demand, and available in sufficient volume to support non-potable uses at the Project site. Use of recycled water at the site will greatly increase the City's utilization of this supply, and provide access for other potential recycled-water users to achieve recycled water use goals for the City's system.

5 ZERO WATER FOOTPRINT POLICY

In October 2007, the City adopted a policy to regulate water use for new development. Under this Zero Water Footprint (ZWF) policy, new accounts are required to offset the proposed project's potable water use through off-site water conservation measures, conversion of off-site potable irrigation to recycled water, on-site demand reduction (relative to existing use), or by acquiring additional supply. The City has provided a list of potential conservation, repair, and other projects within the service area that could be used as offsets for new service accounts. In 2011, the City adopted an additional policy that further refined the offset options available to meet the ZWF requirements.

5.1 Project ZWF Compliance

The proposed Project is required to comply with the City's ZWF policy, and will offset all of its potable water demand. Phase I of the NLP project is already under construction and is currently offsetting potable water use through conversion of off-site landscape irrigation (Devlin Road extension, previously supplied by potable City water) to supplemental supply from an on-site well. Once Phase II is completed and a connection to the City's recycled water system is established, the Devlin Road irrigation offset will be supported from the City's recycled water supply, and pumping from the well will be discontinued. Average irrigation demand for the Devlin Road extension landscaping is 1.8 afy (WJM C&E, 2015), which more than offsets the Phase I potable water use of 0.87 afy (Table 2).

Phase II will offset its potable water demand by implementing several items off of the City's offset "toolbox", likely to include a combination of off-site landscape irrigation water conversion and conversion of existing potable water customers within the Tower Road area to recycled water. In addition to the customers identified in Figure 3, there are at least two other industrial customers (the Napa Vallejo Waste Management Authority's transfer station and the City of Napa's Material Diversion Facility) who could be converted to recycled water in conjunction with the project.

Anticipated potable water use for Phase II, once completed, would be 38.9 afy. ZWF offset totals will be required to be at least that amount.

5.2 City-wide Compliance

On the whole, compliance with the City's ZWF policy should essentially result in no net increase in potable water demand²⁷ as new projects are built within the City's water distribution area. The effect of this policy was not explicitly accounted for in the long-term potable demand projections in the 2010 UWMP or for this WSA. However, two of the main ways that projects can reach compliance with the ZWF policy would be through funding conversion of irrigated landscape areas to recycled water, and improving the efficiency of the City's water distribution system (reducing system losses). The analysis in this WSA has included projections of both recycled water system expansion and reduced potable water losses that would, at least in part, be funded through implementation of the ZWF policy. While the demand analysis has not fully incorporated the effect of the ZWF policy, it does provide an indirect partial accounting, as can be seen by the declining potable-water demand through 2025 (Figure 5). After 2025, potable demand is projected to increase. This was deliberately done to provide a conservative perspective of future long-term planning scenarios (Citywide demand is forecast to increase despite a policy that requires new demand to effectively remain stable).

²⁷ Or alternatively, offset increases in demand with increased volume of reliable supply.

6 LIMITATIONS

This technical report was prepared in general accordance with the accepted standard-of-practice existing in Northern California at the time the analyses were performed. No other warranty is made or implied. Readers are asked to contact us if they have additional relevant information, or wish to propose revisions or modified descriptions of conditions, such that the best data can be applied at the earliest possible date.

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